

# INSIDE DAIRY

Your levy in action



## Seasoned response to rising costs

06

// What's ahead for commodity prices? // Breaking the lameness cycle

// Q&A: Banks on trends and expectations

DairyNZ 



# OVER THE FENCE...

## Inflation and farm costs will be front of mind for many of our farmers right now.

As we continue to see rising costs, there are a range of dynamics driving the increased input costs and some smart, practical tactics farmers can take now to be prepared for any changes ahead.

This edition of *Inside Dairy* focuses on how to respond to inflation, with DairyNZ's head of economics Mark Storey diving into what recent global events mean for our dairy farmers (page 2). He also suggests preparing budgets for different milk price scenarios, as we expect cost pressures to remain in the short term.

Banking experts from New Zealand's five largest rural lenders share their thoughts (page 14) on what farmers should be factoring into planning right now, while reflecting on things farmers are doing well.

It's also great to learn from the ideas and experiences of other farmers, like Donna and Corrie Smit, from our cover story (page 6). These Bay of Plenty farmers share their experiences weathering a range of issues and how they deal with high input costs.

In tough times, the wellbeing of you and your team is crucial. Kane Briscoe knows all about the strains of the job and shares his tools for coping with farm stress (page 13), including getting fit, eating well, and reframing the challenges at hand.

Lastly, thank you to all the farmers who attended our nationwide emissions pricing discussion events. We had engaging and robust conversations with more than 1000 farmers at the meetings. Submissions have closed, but we remain determined to get the best outcome for you – we believe that is aligned with the He Waka Eke Noa proposal submitted to Government in May. We'll keep you updated as that process evolves.

This is our last *Inside Dairy* issue for 2022 and I want to pass on my best wishes to all our farming families. It has been a significant year for dairy and I hope you have a restful break.

As always, feel free to reach out with any feedback or questions.

[tim.mackle@ceo.dairynz.co.nz](mailto:tim.mackle@ceo.dairynz.co.nz)

**Tim Mackle**

Chief executive | DairyNZ

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### On the cover:

Bay of Plenty farm owners Donna and Corrie Smit from this edition's cover story.



### Reader survey – be in to win

What are you enjoying about *Inside Dairy* and how could we make it a better read for you? Complete our quick survey and go in the draw to win one of five \$100 Farm Source store vouchers. Head to [bit.ly/insidedairyfeedback](https://bit.ly/insidedairyfeedback)

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## 06

### Shifting the dial on farm costs

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Research shows early identification and prompt effective treatment works.



#### We appreciate your feedback

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# Can we stay above the churn of global commodity prices?



Mark Storey, DairyNZ's head of economics, looks at what lies ahead.

Recent global events, most significantly the COVID-19 pandemic, Ukraine conflict, spiralling inflation rates, and heatwaves in Europe and Asia, have all caused severe disruptions.

Although global dairy markets have fared relatively well through this mayhem, and while shocks caused by the global pandemic are receding, the challenges of the economic reset remain.

To predict what all this might mean for dairy farmers' financial returns in the next few seasons, we need to look at how dairy commodities have tracked in relation to other major commodities, and we need to consider if those relationships might change.

## Firstly, what effect has the global pandemic had on the dairy sector?

The effect has been relatively modest. Analysis from the Food and Agriculture Organisation of the United Nations (FAO) shows the pandemic's largest impact on dairy products was on world butter prices, with sharp decreases in early 2020 that rebounded later that year. Overall, the FAO Dairy Price Index indicated dairy product prices increased by 17% in 2021.

World milk production remained relatively stable throughout the pandemic. Global exports and imports slowed in 2020 due to transport slowdown and disruptions in supply chains but largely rebounded during 2021.

## How have other major commodity prices fared in the last decade – and are they linked?

The graph on page 3 shows prices in the dairy, cereals, fertilisers and oil commodity markets have tended to track each other over the past 14 years. Notably, prices for all four commodities declined sharply during the Global Financial Crisis of 2008,



while all four price indices climbed during the latter stages of 2020 and into 2021 as the pandemic disrupted supply chains.

Oil and fertiliser prices have continued to rise in 2022 (although dipping in the last few months), driven partly by the conflict between Russia and Ukraine. Given the energy-intensive nature of the fertiliser industry, we generally expect to see a relationship between energy prices and fertilisers. You can see this relationship in the price series shown in the graph, with aligned peaks in 2008, 2011 and, most recently, 2021/22.

The relationship between the prices of dairy commodities and energy prices is not as clear-cut. The time series shows the two price indices tracking each other over this period, with the main exception being 2012. Up to a point, this trend can be explained by the fact that energy prices have flow-through effects into the production costs of dairy for feed costs, fertilisers and fuel.

However, while there are some similarities between the dairy and energy industries (e.g., the demand for both oil and milk is relatively insensitive to price), we can't be confident this will continue. International analysis of the relationship between dairy prices and energy prices over the past decade suggests much of it has been coincidental – i.e., it's resulted from simultaneous demand or supply shocks from various origins, rather than a causal relationship between dairy and energy.



**We're less confident that dairy prices will stay aligned with energy and fertiliser prices going forward.**

There are also significant differences in the factors driving demand and supply in both markets. One key difference is that the global supply of dairy products cannot be ramped up or slowed down the same way oil can be. For this reason, it will generally take longer for market signals to flow through into production decisions on-farm and then the supply of dairy products to the market.

### What does it mean for New Zealand dairy farmers?

What matters to farmers is the ratio of the milk price you receive to your input costs. Given the ongoing Ukraine conflict and an expected surge in energy prices in Europe's coming winter (our summer), we expect global energy and fertiliser prices with remain high for the next 12 to 18 months. These costs are flowing through into the cost of locally grown maize, grains and silage. International PKE prices are also remaining high.

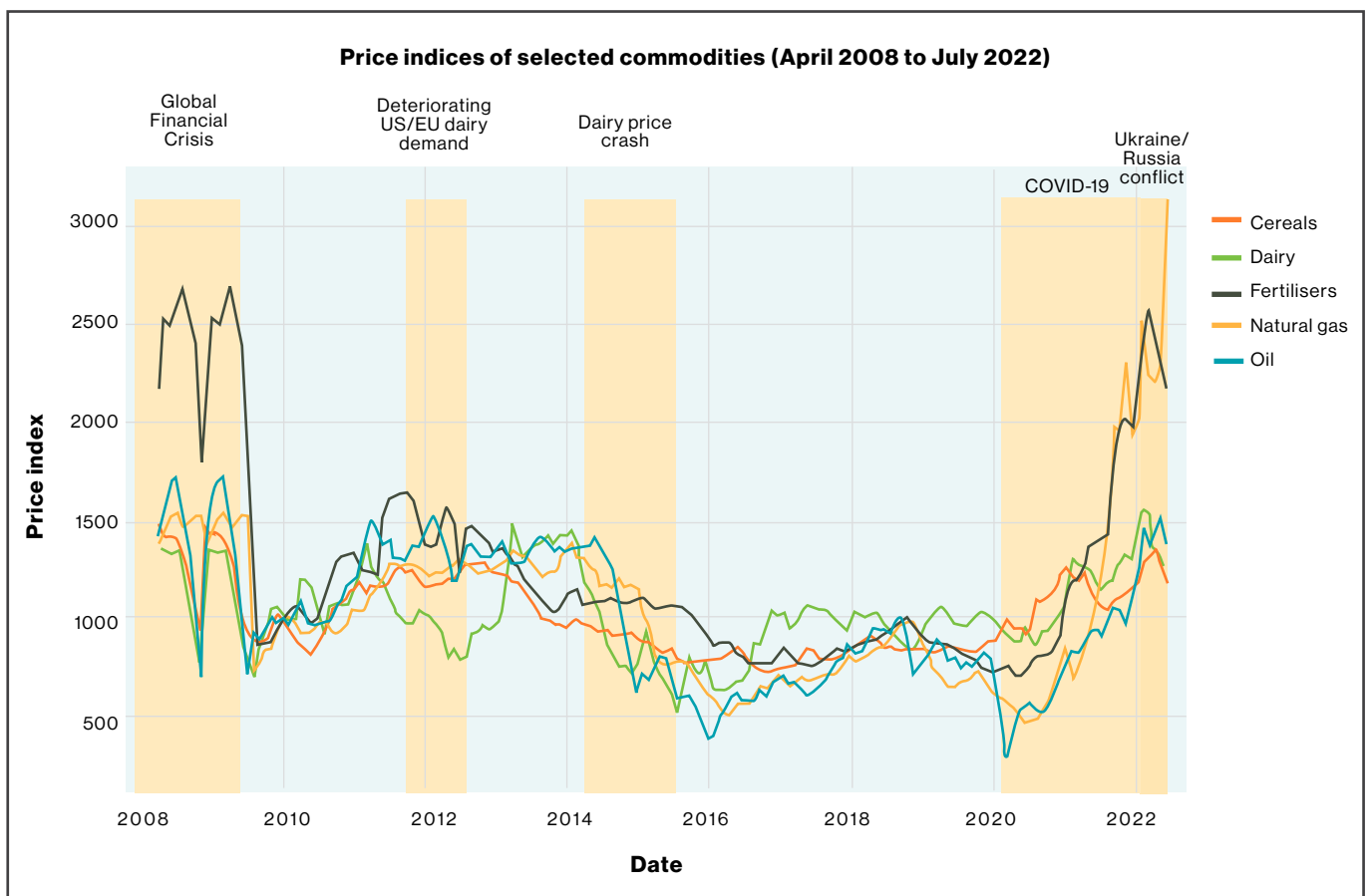
We're less confident that dairy prices will stay aligned with energy and fertiliser prices going forward. Put simply, although those costs might remain high, the milk price may not.

Meanwhile, with the Reserve Bank's decision in November to hike the official cash rate (OCR), and further rate increases forecast next year, farmers will be facing increased costs to service their debt. In general, these rapidly increasing interest rates have a greater impact on profitability than direct fertiliser and fuel costs.

This reinforces our messages to farmers to regularly set and review your budgets to determine if your costs are tracking with your revenue. Milk price forecasts change frequently, so it can be helpful to always prepare two farm budget scenarios, using the current consensus milk price (\$9.00+/kg MS) and the 10-year average milk price (about \$7.00/kg MS).

### Key points

- 1 Cost pressures on farmers will likely remain high in the next 12 to 18 months.
- 2 While dairy and energy prices have tended to follow each other in the past, we can't be confident this will continue.
- 3 We recommend preparing two farm budgets based on the current consensus milk price and the 10-year average milk price.





## DairyNZ Board update

Two experienced dairy farmer candidates, Tracy Brown and Chris Lewis, have been elected by levy payers to DairyNZ's Board at the Annual General Meeting (AGM) in October.



Along with the other board members, Tracey and Chris will play a key part in helping to set the future direction of DairyNZ and the sector, as they bring knowledge and expertise that will support our farmers through a changing farming environment.

At the AGM, DairyNZ thanked departing Board member Elaine Cook, who has made an invaluable contribution over the past seven years.

This year's AGM also acknowledged the significant year it has been for farmers, including inflation driving up costs on-farm, staff shortages, regulatory changes, and COVID-19, while also highlighting some of the sector's achievements.

Read more in DairyNZ's *Annual Report Summary* sent to you with this edition of *Inside Dairy*.

## Foot-and-mouth disease ready

When visiting farms, remember to:



**STOP**

Have I

- travelled overseas recently?
- followed the full standdown period needed?
- considered my biosecurity risks?
- checked what the farm's biosecurity requirements are?



**CHECK**

- Have I signed in?
- Am I following the farm's biosecurity requirements and instructions?
- Do I have the correct PPE?



**CLEAN**

- Have I followed the clean on and off processes for the farm?



**REPORT**

- Have I spotted anything unusual?
- Have I reported it to the farm manager/ host?

## Set for success in contract milking



Canterbury and Taranaki farmers were the first to benefit from a new contract milking short course launched in November.

Developed jointly by Dairy Training Ltd, DairyNZ and Federated Farmers, the three-day course is designed to give current and future contract milkers the best chance of success, says DairyNZ farm systems specialist Phillipa Hedley.

"We see a lot of people going into contract milking without a full understanding of what's involved, how they'll get paid, or what the risks are," says Phillipa.

"This course helps participants learn about everything from assessing the financial viability of a position through to knowing the main things that trip up contract milkers."

Go to [dairytraining.co.nz/courses/contract-milking](https://dairytraining.co.nz/courses/contract-milking) for details about the next course.



# Better – that’s our story

We know that building trust and pride with the public is important to you, and that’s the driver behind a new levy-funded campaign called *Better*.

Our research shows most Kiwis don’t know the ins and outs of dairying, but almost all understand stories about how farmers are doing things better. Better – rather than perfection – is a simple message that everyone can relate to.

We’ve created a fun and engaging commercial for mainstream TV and OnDemand (you may have seen it) that’s designed to be seen by as many Kiwis as possible. There are also a series of short, animated videos on digital channels and social media, and a webpage giving real-world examples of the actions farmers are taking.

With a touch of quintessential Kiwi humour, ‘Better’ shares the commitment of dairy farmers and our sector to create a more sustainable future – bit by bit.

This is part of our larger *Here for the Long Game* campaign, and it’ll run through to March 2023. We’ll keep showcasing new examples of work farmers are doing, which will keep the campaign fresh.



Check out what we’re doing and why at [dairynz.co.nz/the-long-game](https://dairynz.co.nz/the-long-game) and [thelonggame.co.nz](https://thelonggame.co.nz)

## Flexible Milking Time Planner

A new tool to help you plan your flexible milking schedule.



Find out more at [dairynz.co.nz/time-planner](https://dairynz.co.nz/time-planner)





# Shifting the dial on farm costs

**After 30 years' dairying on the same Bay of Plenty farm, Donna and Corrie Smit have learned lessons on weathering everything from devastating floods, to milk price fluctuations resembling a seismic graph of nearby White Island's volcanic activity.**





## Donna and Corrie Smit

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<b>BUSINESS TYPE:</b>	Owner-operator
<b>LOCATION:</b>	Edgecumbe, Whakatane
<b>FARM SIZE:</b>	160ha effective milking platform, 52ha effective support block nearby, (47ha owned and 5ha leased)
<b>PEAK COWS:</b>	580, milked via two separate dairy sheds
<b>FARM SYSTEM:</b>	2 (1-10% feed imported)
<b>PRODUCTION:</b>	219,000kg MS budgeted

As dairy farm costs climb ever upward, Donna and Corrie are applying their learnings from previous peaks and troughs at a time when many farmers are struggling to maintain profitability.

Farmers involved in DairyNZ's Budget Case Study project, which includes the Smits, have experienced an average increase in operating expenses over the past two years of an eye-watering 23%, up from \$4.34/kg MS to \$5.34/kg MS (budgeted for 2022/23).

That \$1.00/kg MS jump in costs has been covered by the rise in gross farm revenue of \$1.26, with most of this being needed to pay for higher interest rates and living expenses.

### Growing more green, for more milk

Donna says she and Corrie have stuck to a "keep it simple" approach throughout their farming career.

At its core, and playing a key to holding costs down, is the mantra to "grow more grass and turn it into milk", capitalising on what will always be the lowest-cost feed source at hand.

"We do use some supplement, about 100t of PKE (175kg/cow/pa) over summer to help keep condition on cows when they stop eating as much grass over the hottest days, but that's as far as it goes, and we're working on a System 2 approach," says Donna.

That ability to maximise the cheapest feed possible has been aided by committing to the highest quality farm they could.

The free-draining productive flats around Edgumbe were not the cheapest when they purchased their farm, but they've proven the most capable of generating quality grass.

"We first had a property at Otakiri, nearer Kawerau, but it was too dry, and another property below sea level that was on a flood plain," says Donna.

"There are lots of ways to maximise your profit – ours was to buy a quality asset to grow good grass on. You make more

profit from day one, which means you can pay off debt earlier and then you're ahead."

Today, the property they've added to 14 times is "tidy but not highly automated", reflecting their simple approach, she says.

Growing plenty of grass has enabled them to hold their farm working expenses (note, this excludes unpaid family labour and depreciation, which are operating expenses) at around \$2.90/kg MS over the past few years, pushed up to \$3.50/kg MS for the past year.

"But this was largely our decision, opting to take advantage of



**“Look for hidden waste, particularly in animal health issues like lameness or mastitis.”**

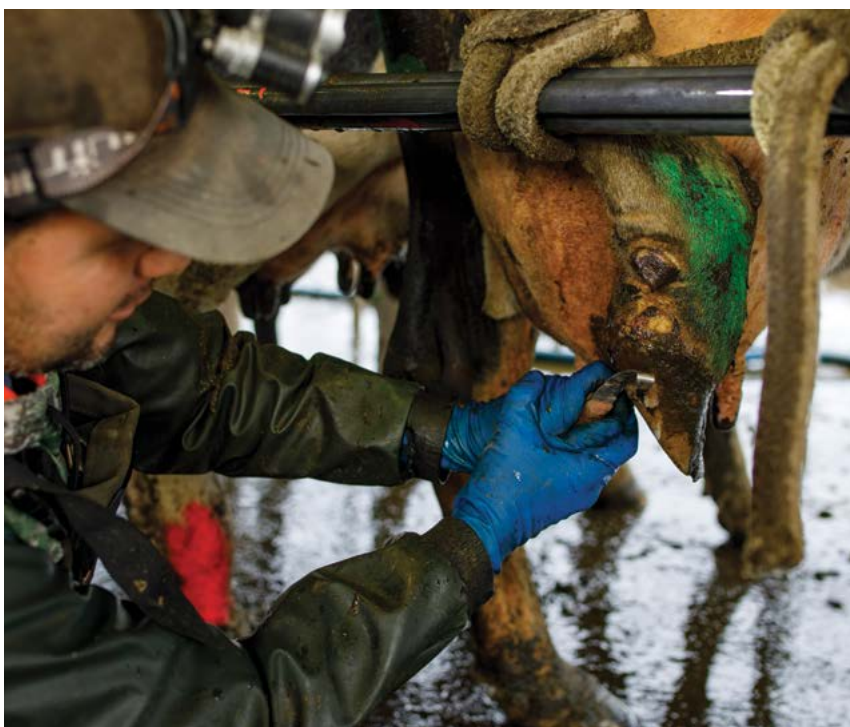




## Corrie and Donna's approach to dealing with higher input costs

### 1. Watch out for fixed costs

This includes subscriptions on tech and proprietary systems. Try to keep all costs as variable and adjustable month by month as possible, dialling them down during low milk price years, or when they start to creep up.

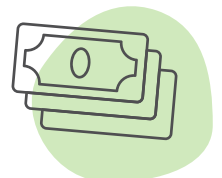


### 2. Look for hidden waste

Particularly in animal health issues like lameness or mastitis. Identify it and work quickly to fix it.

### 3. Keep it simple

It's all about converting as much grass as possible to milk solids, and it's easy to over-complicate and overspend if you lose sight of that.



the higher payout and spend some more on repairs and maintenance than we usually would," says Donna.

The usual suspects also appear on their list of increased costs, namely electricity, fertiliser, fuel, rates and supplement.

#### Winding costs back

Their ability to adjust to rising farm costs stems from their second principle: to keep costs as variable as possible, rather than be lumbered with ongoing, fixed costs.

The "keep it simple" approach fits well with this. There are no major overheads, like extra expensive depreciating machinery and infrastructure associated with high



supplement inputs. Meanwhile, good soil fertility levels mean they've been able to tune back fertiliser inputs with confidence in the past year.

Corrie and Donna also work hard to minimise hidden costs from waste that can occur throughout the farm operation.

This demands a quick response to problems, whether it's a leaky trough or lame cows, whereas leaving those problems results in a far greater expense later.

"Lame cows are a good example. It's easy to put off dealing with them – they're not fun to do – but you can lose so many more days out of the herd and get lower production from them, and that may not be counted, but it is real," explains Donna.

They also encourage staff to put items back where they found them, and always have a spare on hand.

"If things don't go back where they should, you end up being unable to find them and buying another, only to find the original later. We ensure it's as simple as having a spare trough arm on your farm bike to make a repair when you see it."

### Under the hood on cost centres

The Smits have also worked hard to build strong relationships with the businesses and suppliers they deal with, often for decades.

"In return, we do expect quality, service and cost effectiveness," says Donna.

These open, well-founded relationships enable them to have honest conversations about price rises.

"They may not always mean you get the increase reversed, but you do at least get to understand why it has happened."

The couple also regularly look at where cost centres in the business are heading.

"We'll do a deep dive into one cost component every three months. For example, electricity is one area you can change your supplier and get a better deal. Insurance is another where you can work together, altering sum insured or excesses to meet the budget."

Flexibility within their farm cost centres has meant, this year, they can dial up their expenditure on labour, including staff bonuses and training. Corrie and Donna recognise the value of their team, and work to keep them on board.

"It's also been a particularly tough, wet calving season, and we've been able to add in some bonuses and extras to let them know we appreciate how tough it's been," says Donna.

Bunnings vouchers and meals out have proven particularly popular with their Edgumbe crew.

**"It's as simple as having a spare trough arm on your farm bike to make a repair when you see it."**





**“We’ll do a deep dive into one cost component every three months.”**

### Future costs include emissions

Donna and Corrie are tackling the future challenge of greenhouse gas emissions pricing in a manner that also fits with their low-cost, simple approach.

“We’re focusing on breeding better, lighter cows that deliver more kgs of milksolids per kg of bodyweight, by moving from a Friesian herd to a cross-bred herd.

“We’re now doing four herd tests a year instead of two, identifying the lower Breeding Worth cows, mating them to Hereford genetics, with the higher ones to Premium sires, keeping their heifer calves as future replacements.”

With no relief from cost rises appearing on the horizon, the Edgecumbe farm may be well positioned for a major shift in operations in coming years, says Donna.

“Because we’re milking through two separate dairies on the two farms side by side, we would look at automating one of them with robotic milking, particularly given the cost of a rotary to cover both would be close to \$1.5 million.”

Their ability to move cows that are suited or not suited to such a system between the farms makes it an appealing option. Labour savings, and an interesting new way to continue dairying, are also attractive.

Donna sees robotic milking becoming a popular option, particularly on smaller North Island dairies, as aging owners look to stay engaged with farming but in a less physical way.

“We’re not quite there yet in terms of the capital cost, but I think it will be getting closer with the next generation of milking robots.”

## Budgeting made easy



Looking for some help with your budgeting? DairyNZ offers a range of free budget templates and guides to suit all business situations. Print and work through each budget by hand, or just download the Excel spreadsheets.

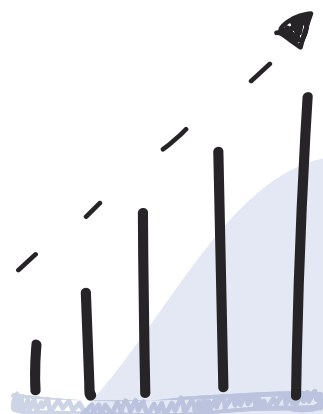


Get started at [dairynz.co.nz/budgeting-tools](https://dairynz.co.nz/budgeting-tools)



# Minding the margins

Even above-average operators are feeling the pressure of cost increases.



An analysis of DairyNZ's Budget Case Study farms shows that, although total operating profit is up by a small amount, cost increases have eroded most of the gains from milk price.

DairyNZ recently summarised three years' data (2020/21, 2021/22 and forecast 2022/23) for the eight farm owners from Northland to Southland who open their books for other farmers to learn from. Here's what we found.

## How are these operators responding to rising costs?

DairyNZ business specialist Paul Bird says the Budget Case Study farms have a range of farm systems, but there are some general principles they're applying in the current environment.



Not changing their profitable farm system – if it's worked, stick to it.



Reviewing every cost item and ensuring it's a 'must have'.



Intense focus on cashflow monitoring and sticking to the budget.

Although **gross farm revenue** is up by

**↑\$1.26/kg MS**

(from \$8.06 to \$9.32, a 16% increase)

**Operating expenses** are also up by

**↑\$1.00/kg MS**

(from \$4.34 to \$5.34, a 23% increase)

This leaves an extra

**+\$0.26/kg MS**

to cover increases in interest rates, taxes and cost of living

"Although costs have risen dramatically, farm profits have been at record levels over the last two seasons and are still looking very strong for 2022/23," explains Paul.

"Planning ahead is about 'what if' scenarios. Most of the Budget Case Study farms have a back-up plan (another budget) in case they don't get the \$9.00+ milk income. Have yours in the drawer ready to go, if needed."

Go to [dairynz.co.nz/budget-case-studies](https://dairynz.co.nz/budget-case-studies) to dive deeper into the numbers.





# Tools for coping with farm stress



Words of wisdom from Taranaki contract milker and Farm Fit founder farmer Kane Brisco.

*Kane uses on-farm equipment like fence posts as part of his workout routine to keep physically and mentally fit.*

Kane Brisco nearly walked away from farming, worn down by the constant physical and mental strains of the job.

“It got to a point where I couldn’t see a light at the end of the tunnel. I lost my passion for farming and got close to walking away from it.”

But at his lowest, he started figuring out practical ways to cope with stress and recharge his passion for life on the land.

## Getting fit

Kane rebuilt his love for farming by taking up boxing. Today, he has an on-farm gym and uses farm equipment like tractor tyres and fence posts as part of his fitness routine.

Staying fit helps him cope with the physical and mental challenges he faces day-to-day. “Whether it’s CrossFit, running or pilates, you’ll find your passion,” he says.

## Eating well

After getting fit, eating well was the next key step Kane took to help him stay well.

Farmers know that cows need the right nutrition to achieved good body

condition and be highly productive. The same goes for you too, he says.

## Taking time out

“Time out with the family to do things you enjoy, and getting off the farm, is really important to relax,” says Kane.

“Balancing commitments to the farm, family and yourself isn’t easy, and you have to keep working at it.”

## Reframing how you see challenges

How we react and deal with challenges has a big impact on stress levels, says Kane.

“Instead of getting angry when something doesn’t go the way I want it to, I think

about what I want to achieve longer-term and then can break down how I want to get there.

“That means you switch from thinking negatively to problem-solving and developing constructive ideas.”

## It’s ok to say you’re not ok

Kane encourages farm owners and managers to be open about the pressures they feel.

“Sharing how you’re feeling encourages other people in the farm team to speak up when they’re feeling stressed . That helps everyone better address issues when they come up.”



Hear the full interview with Kane about coping with stress in *Talking Dairy* episode 33 – [dairynz.co.nz/podcast](https://dairynz.co.nz/podcast)

# What banks want to see from farmers

Thoughts on diversification, debt repayment, rising costs and succession planning from New Zealand's five largest rural lenders.

What do you want to see farmers factoring into their financial planning?

## RABOBANK

*Bruce Weir, Rabobank general manager country banking NZ*



Agricultural commodity prices are currently strong and the outlook for the sector is positive. However, global events have impacted input costs which, in combination with increased interest rates, has materially increased overall farm costs. Farmers should factor these increases into their financial plans to consolidate their financial position for leaner times, or to position themselves to expand as opportunities arise.

It's also essential that farmers prepare for the impact of upcoming environmental regulations and greenhouse gas pricing proposals. Farmers need to understand their numbers around emissions, think about how these numbers affect their business, and identify what they can do to minimise any negative impacts. We'll be working closely with our clients to assist in this area and strongly believe the best way to do this is by providing them with the right information to help them make good business decisions.

## BNZ

*Dave Handley, BNZ general manager agribusiness*



There are a number of things farmers should be factoring into their financial planning over the next few seasons:

- Rising on-farm costs.
- Increasing interest rates.

- Ability to source labour.
- Environmental compliance costs.

In a rising cost environment, it's important for farmers to understand the breakeven point for their business. They also need to identify what levers they can pull within their sphere of influence to help them maintain profitability. Understanding these numbers allows farmers to set realistic goals for their business both this season and in the longer term.

We would also expect farmers to understand what capital needs to be spent to maintain environmental compliance and for this to be factored into their business plans.

## ASB

*Ben Speedy, ASB general manager rural*



The pace of change is accelerating and how we farm tomorrow will be different. It's important that food and fibre producers continue to talk to their professional advisers and start to get a handle on their emissions.

These farmers also need to continue to learn from their peers about ways to diversify or reduce any environmental impacts, to ensure they can operate a sustainable farming business for the future.

Another element to focus on is identifying diversification options which support robust succession planning. It's never too late or too early to start succession planning. Farmers can look at options for diversification of income that will allow more choice for family members through alternative income streams.

Talk with professionals and family to start the planning process sooner rather than later.



“We encourage farmers to talk to each other to share ideas across the industry.”

What trends are you seeing in how well farmers are going with their financial planning?

### WESTPAC

Tim Henshaw, Westpac NZ head of agribusiness



We can see from our industry figures that debt is being repaid, particularly in the dairy sector, so we are certainly seeing a strengthening in our customers' balance sheets.

We have also seen many farmers investing in a range of capital initiatives to build their resilience, become more efficient, have a lower environmental footprint and improve working conditions for their staff.

These have included projects like:

- additional water storage
- upgraded effluent systems along with investment in monitoring and recording systems
- changing to more efficient irrigation systems (k-line or rotorainers to pivots)
- increasing the effluent area of their dairy farm to spread that valuable nutrient further
- investing in data tracking through things like smart cow collars.

We encourage farmers to talk to each other to share ideas across the industry. Your banker is always there to help too.

### ANZ

Lorraine Mapu, ANZ general manager – business



Our agri customers are good at preparing for climate and financial volatility. Many now have diversified investments, so they're not solely reliant on dairy. We've seen most farmers pay back considerable debt over the past four to five years due to favourable milk prices, which has improved their financial flexibility.

We've also noticed an increase in hedging solutions like milk price. In addition, many farmers have invested in new automated infrastructure to deal with growing staff challenges. These include cup removers, drafting gates and irrigation.

All of this requires investment, but we believe the job of a bank is more than just lending money. It's also about providing guidance, expertise and insights to support farmers as they make decisions about building strong and sustainable businesses.



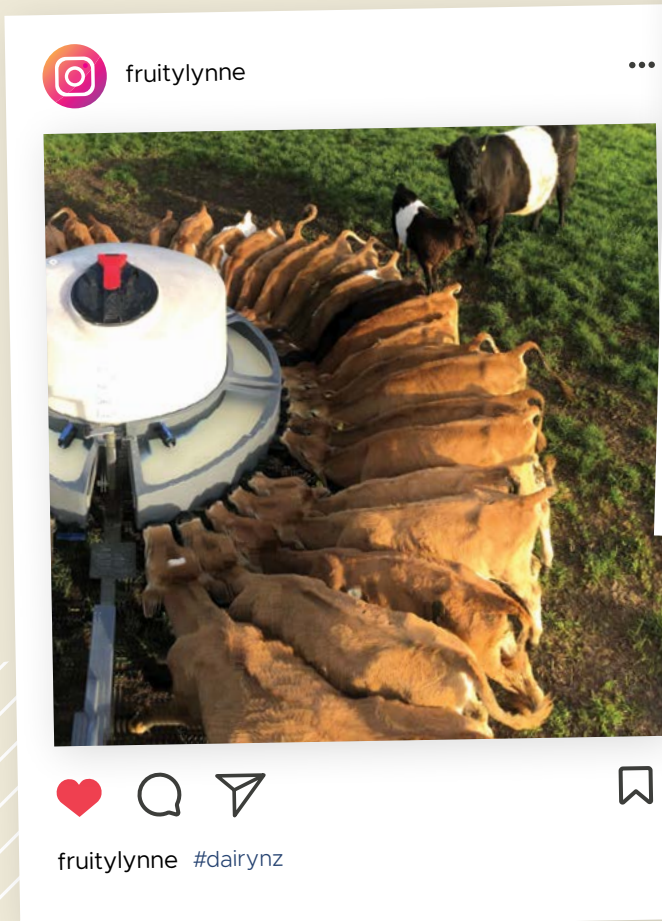
#### Business tools

Keep on track and make your money work harder – visit [dairynz.co.nz/business](https://dairynz.co.nz/business)



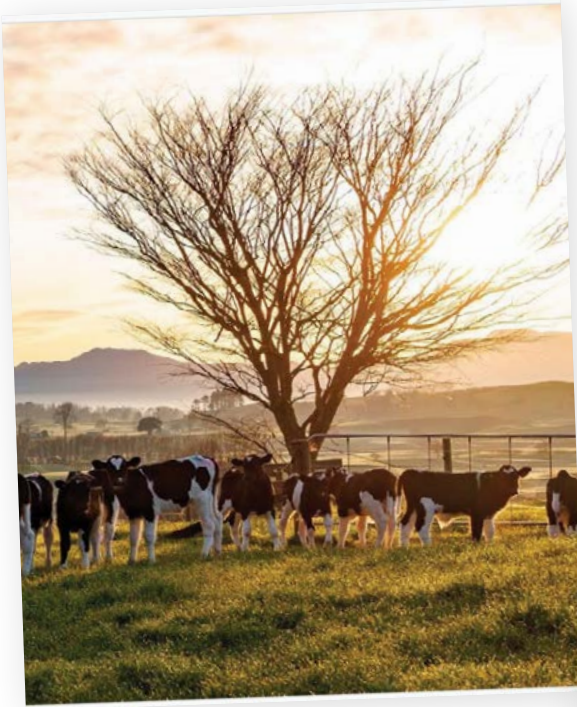
# Snapped on-farm

Here's a handful of our favourite farming photos from social media recently. If you'd like your photo to feature, share your snaps by tagging us on social media or using the #dairynz hashtag.



*Stashing this away in my bank of memories.*

*Gracie wishes she could still get onto the calfateria.*



paulsutherlandphoto #dairynz



Looking back across to Mt Te Aroha and the added bonus of some lively calves enjoying the morning sun.



theonceadayfarmer #dairynz

The maize cycle is underway again, planted a little later than usual due to our wet spring.



southtaranaki.yf #dairynz

As well as fundraising for the club, it's also so good to get out as a group after work and have a few laughs while helping the local farm owners out.





# Farmer study a wake-up call

Dairy farmers taking part in a recent sleep study got less shut-eye as the season progressed – with an extra surprise for some.



DairyNZ has been working with dairy farmers over the last three years to better understand their sleep patterns and how those relate to different farm systems and milking schedules.

In this year's August and September study, 37 farmers from Pāmu's Central North Island dairy farms wore Oura 'sleep rings' every night. Measures recorded included total sleep time, awake time and heart rate. The system also calculated sleep efficiency (sleep quality and total sleep time), and an overall sleep score.

"We know poor sleep can affect work performance, safety and social lives, but there have been few in-depth studies in NZ to understand the impact on farmer sleep patterns of extended work hours in spring," says study researcher Dr Kelly Dale, a sleep expert from Healthy Lifestyle NZ, who adds that even data from a small study like this one has the potential to help farmers better manage their sleep in future.

Farmers averaged seven hours' sleep per night at the start of the study (one week before calving), but this dropped by half an hour per night by the end of the season. Some farmers were also in for a surprise.

"While some of them were great sleepers, others were getting poor-quality sleep but were unaware of it," says Kelly.



Putting a finger on the problem: farmers wore an Oura ring at night to record their sleep data.

"Even getting to bed earlier by about one hour on average couldn't completely compensate for farmers' wake-up times, which became earlier and earlier as calving continued."

Knowing their sleep data has already helped some of the study's farmers, like Mona Cable, adjust and improve their sleep patterns.

"The Oura app used my sleep data to suggest areas to improve on, so I put more focus on going to bed earlier. Getting a decent night's sleep helped to improve things like my heart rate and sleep score," says Mona.

Kelly says while it's still early days for the Pāmu study, it suggests farmers and managers need to put strategies in place to make sure everyone has enough time off to rest and recharge, especially during busy times like calving (get farm managers' action tips at [dairynz.co.nz/calving-success](https://dairynz.co.nz/calving-success)).

The study will resume in March/April 2023, to compare the impact of autumn calving with spring calving on farm teams' sleep and fatigue.





## Udderly useful genetic data

A focus on herd recording and genetics has helped David and Wendy Harker turn around major udder problems in the herd.

Back in the 1990s, Te Awamutu dairy farmers Wendy and David Harker started nominating bulls to sort out their herd's udder issues.

"Cups wouldn't stay on the two-year-old heifers without letting air in, and poorly-supported udders collapsed by the time they'd had their third calf," explains Wendy. "Now we maintain udder quality through breeding to reduce somatic cell count and achieve better udder health – and the cows are much easier to milk!"

Wendy says using NZAEL's tools has made it easier over the years to select bulls that meet her breeding goals.

"I can maintain my standards in udder conformation and avoid traits that I want to avoid; for example, high pins."

She says farmer input into the database is crucial too, with accurate recording, parentage testing and herd testing being three key things to consider.

As well as breeding profitable, high-producing cows with good udders that can last in the herd, Wendy's now focusing on improving herd capacity and fertility.

"Cow capacity is measured using chest width and chest depth, so we can tell how much food she can carry, which contributes to body condition and fertility. Also, it shows how much room her heart has – cows need to pump a lot of blood around to make milk."

Wendy says it's important to know what type of animal suits your system and use Breeding Values (BVs) to achieve that.

"I use the Bull Search and the Ranking of Active Sires list, viewing the bulls' BVs within the Breeding Worth system, and concentrating on protein BV, Fat BV, Fertility BV and Traits Other than Production. It's not just about size – I'd rather milk two 600kg cows producing 600kg MS, than three 400kg cows producing 400kg MS."

Having owned their 145ha (effective) 415-cow farm for 39 years, Wendy says she can now walk through her herd and see the types of cows she likes to milk.

"That's immensely satisfying."

### Data in, data out

Data from all dairy farmers' herd recordings is captured in the Dairy Industry Good Animal Database (DIGAD).

- Data in: Start with entering the birthdate of calves, calving dates of dams, the number/identity of culled cows, and the reason why.
- Data out: Improve your breeding programme using our tools like Bull Search and Bull Team Builder at [dairynz.co.nz/animal-evaluation](https://dairynz.co.nz/animal-evaluation)



# Greener on the other side?

Taranaki researchers are comparing two adjacent farmlets to see if diverse pastures can help dairy farmers increase their resilience to climate change.



At Dairy Trust Taranaki (DTT), the farm team and researchers are six months into a seven-year project assessing the impacts of adopting diverse pastures in a Taranaki dairy farming system.

Two self-contained farmlets have been established at DTT's 34ha Waimate West farm: one with conventional ryegrass-based pastures, the other with diverse pastures (one aspect of a regenerative farming system).

Jason Rolfe, DTT general manager, says the project will show if diverse pastures reduce nutrient loss and greenhouse gas emissions, increase soil water retention and soil carbon sequestration, and increase production and profit.

"We'll also test milk for micronutrient and macronutrient differences to see if there are health benefits, such as higher Omega-3. And we'll test the appearance, texture, smell and taste of the diverse pasture milk to ensure it's still fit for purpose for local and global customers."

Meanwhile, a network of five partner farmers has been set up across Taranaki. These farmers are at varying levels of adopting diverse pasture species and other regenerative practices, which will provide greater insight for the project.

“**The results of this work won't just apply to Taranaki farmers.**”

Jason says the project aims to scientifically test key assumptions behind regenerative agriculture.

"It will give us evidence for or against any financial and environmental differences between alternative and conventional systems.

"The results of this work won't just apply to Taranaki farmers, but to systems across New Zealand that are prone to summer dry conditions."

Six months in, 30% of the diverse farmlet has been sown into a Barenbrug diverse pasture mix (see sidebar). Another 10% will be sown annually following a crop of maize.

Preliminary results show no significant difference in milk or total pasture production between the farmlets.

Follow the results and register for email updates at [dairytrusttaranaki.co.nz/dtt-waimate-west](https://dairytrusttaranaki.co.nz/dtt-waimate-west)

## What's in the mix?

The diverse pasture mix currently includes:

- Maxsyn perennial ryegrass
- Safin superfine cocksfoot
- Rohan perennial ryegrass
- Timothy
- Bareno pasture brome
- Tabu+Italian ryegrass
- Kotuku white clover
- Weka white clover
- Morrow red clover
- Laser persian clover
- Coolamon sub clover
- Chicory
- Captain plantain

Note: both farmlets receive similar levels of nutrients, the conventional farmlet through synthetic fertiliser and the diverse farmlet through natural fertilisers (Osflo).

## Who's funding it?

Dairy farmers are funding 11% of this project via their DairyNZ levy, with MPI funding 69% and the remainder coming from DTT.

# Optimising summer nitrogen use



Tips for getting your nitrogen fertiliser applications right over summer, from DairyNZ's Virginia Serra.

Making tactical decisions to optimise nitrogen (N) use in summer can be challenging, especially on non-irrigated summer-prone areas.

As well as thinking about the growing conditions (e.g., soil moisture and temperature), consideration must be given to potential feed requirements and the long-term weather forecast.

And with the new 190kg N/ha cap on N fertiliser use, it's also important to know how much N you've already applied, so you have enough for the rest of the season.

We've identified these top tips to optimise N use over the summer months:

- Increase pasture cover during late November/early December, especially on non-irrigated farms.
- Apply N in early summer because it promotes tillering and helps maintain pasture quality through the season.
- Apply N only if soil moisture levels are adequate for good pasture growth. If the grass isn't growing, it can't utilise N and the N will drain away if it rains.
- Consider using coated urea if the risk of volatilisation (the conversion of N in urea to ammonia gas, lost to the air) is high, which occurs in hot and dry conditions. Avoid application during the hotter times of the day and around scheduled irrigation.

- Farm location and soil profiles are unique, so do a risk assessment as part of your plan to optimise N use over summer, drawing on your knowledge of how dry it gets (and when) in your location.
- Check how your N application is going for the season, and work out how much you'll need for autumn.

Also, be aware that response rates to N application in summer can be low, due to temperatures being too high for optimal ryegrass growth (above 16°C), increased N in the soil from greater mineralisation, N provided by clover fixation, and low soil moisture for non-irrigated pasture.

Finally, the soaring cost of N fertiliser (currently \$1450/t urea = \$3.15/kg N) is another reason to optimise N applications. At a low response of 5kg DM/kg N, the cost of the extra feed grown can be about 63 cents/kg DM.

If you'd like to optimise your N use during the summer, discuss this with a trusted adviser who can provide advice based on your farm location and soil profile.

Get more advice at [dairynz.co.nz/reducing-nitrogen-use](https://dairynz.co.nz/reducing-nitrogen-use), where you'll also find a link to our *Talking Dairy* podcast on the topic (episode 12).

*Summer nitrogen applications require careful assessment of pasture cover and soil moisture beforehand.*





# TAKE 5

## Tips for farmers

# 1.



### New year, new skills

Less than one-third of new dairy employees stay with their employer for more than one year. When asked what would convince them to stay, farm assistants ranked 'more opportunities to develop skills' nearly as high as 'a pay rise'. Check out role-specific training options at [dairynz.co.nz/roles](https://dairynz.co.nz/roles)

# 3.



### Saltwater therapy

Clear your head, wash off the stress and catch up with other farmers at a free Surfing for Farmers event near you this summer. No experience needed, and they provide all the gear. It's all about getting off-farm and having a laugh at the beach, with a BBQ to top it off. Find an event near you at [surfingforfarmers.com/locations](https://surfingforfarmers.com/locations)



# 4.

### Calcium for cull cows

Most cull cows are at risk of milk fever during or just after transport because they can't replace the nutrients they're still putting into milk. Reduce the risk by giving them extra calcium and magnesium before transport, and by choosing the closest processor (risk increases by 30% for every 100km travelled).

# 5.

### Drenching done right

Steps to follow when drenching a group of calves:

- Weigh a sample, drench to the heaviest. Draft off very light calves, dose them separately.
- Calibrate the drench gun by squirting several doses into a large syringe – adjust gun if necessary.
- A faecal egg count 10-12 days after drenching will show if it's worked.

More info at [wormwise.co.nz](https://wormwise.co.nz)



# All the (environmental) trappings

Patea farmers are trapping pests and helping bring the kiwi back, in one of many catchment projects helping Taranaki locals farm in harmony with the environment.



*Damian Roper in front of his tuwhatawhata [stockade] pā, which he built from a traditional Māori design used to protect gardens.*

Just 30 years ago, kiwi could be found running through the paddocks in and around Tarere Conservation Park.

“I’ve heard one got picked up for a school show-and-tell back then – that’s how common they were,” muses local dairy farmer Damian Roper. “I’m told you could also hear them when checking on the cows at night.”

Avid conservationists Damian and wife Jane own a 273ha (158ha effective) farm in Alton, which backs onto Tarere Conservation Park. They’re part of the Patea River Community Catchment Group, which has a core membership of eight (over half are dairy farmers), with other local farmers, iwi and communities also involved. Its pest and predator control project aims to restore kiwi numbers across the top end of the park, its 2000ha ‘extension’.

The group has an existing trapline, checked fortnightly. Over the next three years, it’ll add another 1200 GPS-linked traps across the area’s ridges and gullies, targeting mustelid pests like ferrets and stoats, plus rats and hedgehogs.

It’s just one of many projects spread over 14 catchments and overseen by Taranaki Catchment Communities (TCC), an MPI-funded initiative formed in 2021.



*A recent trapping workshop showed the group how to set and bait the traps.*



“TCC supports Taranaki’s rural sector towards a more environmental, economic and socially sustainable future, plus projects aimed at improving farmers’ mental health and financial literacy,” says TCC project lead Paul Turner.

As well as providing Paul with an office, DairyNZ donates time and expertise for the kiwi project, alongside Beef + Lamb NZ, Federated Farmers and Venture Taranaki.

“DairyNZ’s credible and far-reaching channels are helping get the group’s message out there, which is leading to more collaboration and better traction with farmers,” says Paul.

Damian and Jane are thrilled about how the kiwi project is bringing farmers, iwi and the wider community together in a big way.

“We’ve had a whole lot of people come out of the woodwork because they share the same passion for biodiversity, for wildlife and the protection of our conservation park,” says Damian.

“We have to protect our valuable flora, fauna and our environment and combat climate change,” he says. “Not just the farmers, but all of our community.”

Find out more at [taranakicc.nz](https://www.taranakicc.nz)





Feature  
update

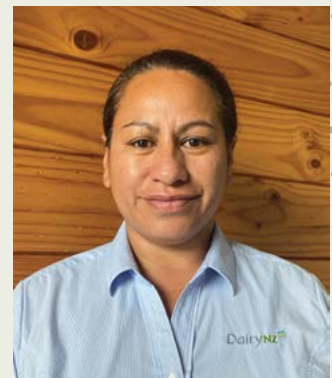
## Northland

When it comes to mastitis, less is more – so get along to one of two farm-hosted Northland mastitis information days coming up in early December. Find out how you can achieve 'less' mastitis and 'more' benefits for cow health and farm productivity and profitability.

It's your chance to discuss which bugs are causing the headaches and what strategies work to reduce cows' infection risk. Guest speakers include local vets and representatives from dairy hygiene and animal health supplier FIL. You can choose from one of two venues/dates and each event runs between 10.30am and 1pm:

- Tuesday, December 6 at the Skeltons' farm in Crutcher Road, Waiotira (about 30 mins southwest of Whangarei).
- Wednesday, December 7 in Kaikohe with the Northland College Farm Team on Suzanne Brocx's Quarry Road farm.

See [dairynz.co.nz/events](https://dairynz.co.nz/events) for more details.



## Bay of Plenty

Come along to one of our seasonal groups in December and January to connect with other local farmers and build your knowledge across a range of key areas. Topics covered at these groups will include supplement selection, maximising pasture growth, and nitrogen use. Bring your questions and look out for your new local DairyNZ Extension Partner Moana Puha, who has recently joined the team.

Contact Moana at [moana.puha@dairynz.co.nz](mailto:moana.puha@dairynz.co.nz) to register. Get more info about each group at [dairynz.co.nz/events](https://dairynz.co.nz/events)

## Waikato

Join hosts Adrian and Pauline Ball at their farm in Tirau on Tuesday, December 13 to learn how they're working on building an operation to fit their needs now, and in the future. Delivered by Smaller Milk and Supply Herds (SMASH), this is a free event and a great opportunity to connect with other local farmers and get inspired.

Find out more and register at [smallerherds.co.nz](https://smallerherds.co.nz)

## Lower North Island

Over the last 14 months, Michelle Greaves has been settling into her Regional Partner role in Lower North Island, supporting farmers

to make sense of the tough issues on-farm. Michelle's been with DairyNZ for 15 years, in which time she's been building relationships with farmers across a variety of roles.

She's well equipped to help you find on-farm solutions, whether it's a question of people management, health and safety, progression, or any another issue you're unsure about. Contact her at [Michelle.Greaves@dairynz.co.nz](mailto:Michelle.Greaves@dairynz.co.nz) or on **021 280 8405**.



## Top of South

Come along to one of four pre-Christmas catchups being held in December on local farms. Choose from Marlborough (Dec 7), Richmond/Waimea (Dec 8), Golden Bay (Dec 14), or Murchison/Maruia (Dec 15). These run between 11am and 1pm – so bring along the whole team. Lunch is provided and there are some great topics on the table. For details, call Mark Shadwick on **021 287 7057** or check out your area's event at [dairynz.co.nz/events](http://dairynz.co.nz/events)

## Canterbury / North Otago / West Coast

DairyNZ's North Otago regional team has a new Extension Partner: Alex Perrott. Alex has extensive experience in farm systems and the environment, gained through studying ecology at the University of Manchester, and dairy farming for several years in Dunsandel. He's passionate about building farmer knowledge, especially when it comes to the environment. He's keen to get stuck in, so make the most of his knowledge and get in touch: [Alex.Perrott@dairynz.co.nz](mailto:Alex.Perrott@dairynz.co.nz) or **027 379 8069**.

## Southland / South Otago

Take some time out this summer to connect with neighbours, friends and other local farmers at one of DairyNZ's seasonal groups or off-farm workshops. Join Jason and Sandy Herrick in Mossburn on Tuesday, December 6 to find out more about the environmental improvements they've made. It's also a chance to discuss management strategies for the summer production curve drop.

Find out more about this event and others near you at [dairynz.co.nz/events](http://dairynz.co.nz/events)

## DairyNZ contacts

Head of South Island	Tony Finch	027 706 6183
Key Relationship Partner	Simon Sankey	021 228 3446
Kāiārahi Ahuwhenua	Clinton Hemana	027 1800 4505
Māori Relationship Partner	Cheyenne Wilson	027 1800 3793
Dairy Training Manager	Hamish Hodgson	027 455 5582

### Northland

<b>Regional Leader</b>	<b>Alison Whiteford</b>	<b>027 499 9021</b>
Extension Partner	Hamish Matthews	021 242 5719
Extension Partner	Stephen Ball	027 807 9686
Extension Partner	Mike Bramley	027 486 4344
Extension Partner	Sarah Kimber	021 809 569

### Waikato North

<b>Regional Leader</b>	<b>Brigitte Meier</b>	<b>027 448 3050</b>
Regional Partner	Kylie Brewer	027 1800 3156
Regional Partner	Andrew Allen	027 1800 3025
Extension Partner	Jaimee Morgan	021 245 8055
Extension Partner	Chris de Wet	027 1800 4410
Extension Partner	Kent Weston-Arnold	027 288 1244

### Waikato South

<b>Regional Leader</b>	<b>Brigitte Meier</b>	<b>027 448 3050</b>
Regional Partner	Steve Canton	027 475 0918
Regional Partner	Debbie Young	027 1800 3786
Senior Extension Partner	Phil Irvine	027 483 9820
Senior Extension Partner	Frank Portegys	027 807 9685
Extension Partner	Denise Knop	027 513 7201
Extension Partner	Ian Butler	027 1800 1981

### Bay of Plenty

<b>Regional Leader</b>	<b>Mark Williams</b>	<b>027 1800 4222</b>
Regional Partner	Kevin McKinley	027 288 8238
Senior Extension Partner	Ross Bishop	027 563 1785
Extension Partner	Chris Hurlston	021 225 8345

### Taranaki

<b>Regional Leader</b>	<b>Brendan Attrill</b>	<b>027 474 4742</b>
Regional Partner	Gill Haenga	027 1800 3605
Regional Partner	John Baylis	027 210 2137
Extension Partner	Ashley Primrose	021 246 5663
Extension Partner	Talissa Squire	027 1800 3499
Extension Partner	Katie Starsmore	027 1800 3707

### Lower North Island

<b>Regional Leader</b>	<b>Mark Laurence</b>	<b>027 704 5562</b>
Regional Partner	Michelle Greaves	021 280 8405
Extension Partner	Janine Swansson	027 381 2025
Extension Partner	Francesca Bennett	027 702 3760
Extension Partner	Tegan Pope	027 808 3411

### Upper South Island

<b>Regional Leader</b>	<b>Anna Hall</b>	<b>027 411 5663</b>
Regional Partner	Antoinette Archer	027 1800 3122
Regional Partner	Tony Hutchinson	027 808 3292
Senior Extension Partner	Mark Shadwick	021 287 7057
Extension Partner	Heather Donaldson	027 593 4124
Extension Partner	Amy Chamberlain	027 243 0943
Extension Partner	Hamish Lambeth	027 290 5988
Extension Partner	Alex Perrott	027 379 8069
Extension Partner	Nicola Blowey	027 1800 4721

### Southland/South Otago

<b>Regional Leader</b>	<b>Guy Michaels</b>	<b>021 302 034</b>
Regional Partner	Stuart Evans	027 393 0114
Regional Partner	Darren Smith	027 1800 4717
Regional Partner	Kirsty Peake	027 483 2205
Senior Extension Partner	Nathan Nelson	021 225 6931
Extension Partner	Karen Duthie	027 358 7579

## DairyNZ directors

Jim van der Poel	021 848 484
Chris Lewis	027 289 8942
Colin Glass	027 486 4064
Jacqueline Rowarth	027 694 4334
Tracy Brown	027 291 1716
Mary-Anne Macleod	021 923 332
Margaret Devlin	021 328 200





# Breaking the lameness cycle

Early identification and treatment of cow lameness can achieve faster recovery rates, according to the results of a recent study.



**Winston Mason**  
Epidemiologist,  
EpiVets

## Key research findings

- Lameness in cows can lead to significant animal welfare issues and limit production.
- Identifying and treating cow lameness early gives the best chance of lameness cure and also reduces the chance of cows becoming lame again.
- Set aside time to lameness score the whole herd – not just those at the back – every few weeks.

Lameness remains one of the most production-limiting animal health diseases in New Zealand dairy cattle and can result in significant animal welfare issues.

One of the biggest risk factors for the most common types of lameness, white line and sole bruising, is a previous case of lameness. Also, the longer the animal is lame for, the longer she takes to become sound – and she's more likely to become lame again<sup>1</sup>.

That's why farmers struggling with a lameness problem often won't see improvement for years, as they're dealing with animals with chronic permanent damage within the hoof. On these farms, the most severely lame animals tend to get treated first, when it's actually the most recently lame animals that have the best chance of being cured. This creates an unfortunate negative cycle, where a lame animal is more likely to get lame again (Figure 1).

**Figure 1. Lameness risk factors**

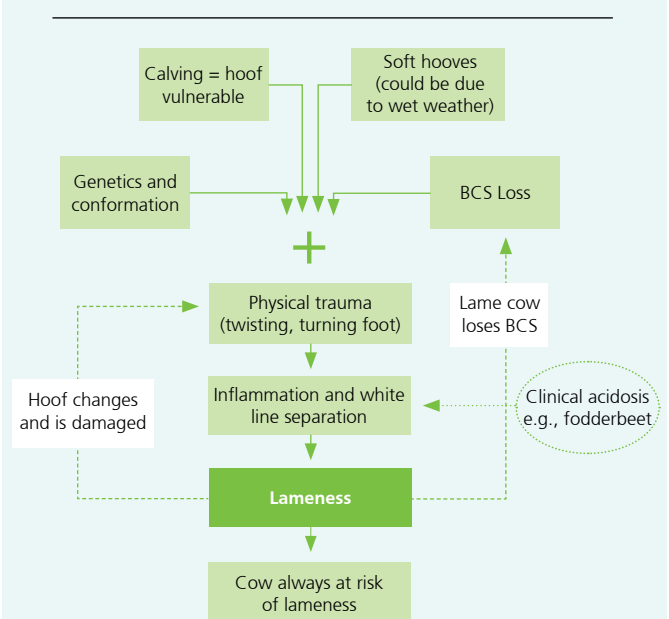
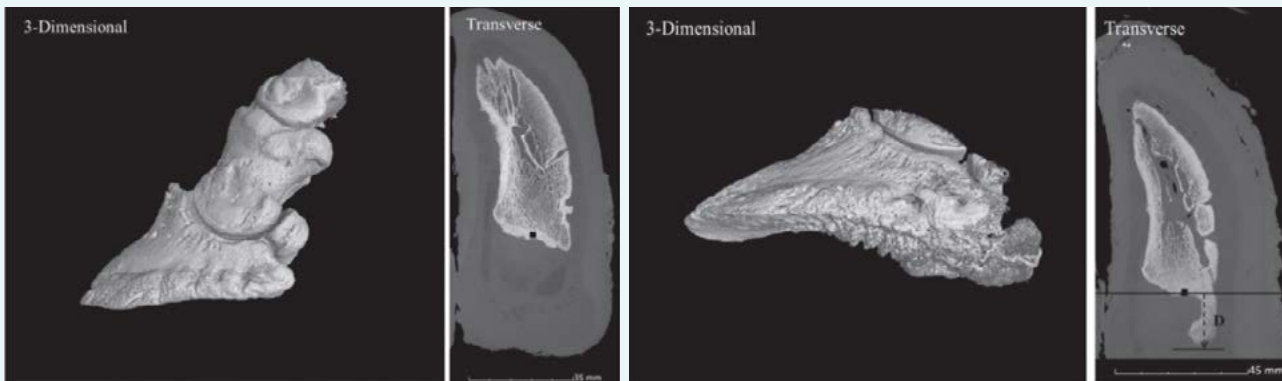


Figure from DairyNZ's *Preventing and managing lameness guide*, adapted from Newsome et al. (2016)<sup>1</sup>.



**Figure 2.** CT images of a cow's bones within the hoof capsule from a non-lame animal on the left, and an animal that had been lame multiple times on the right<sup>1</sup>.



*New bone had formed at the bottom of the existing bone during lameness, which in turn made the sensitive tissues within the hoof more prone to future damage and lameness, creating a damaging negative cycle. These bony changes cannot be fixed, only prevented.*

It's not all doom-and-gloom though. The good news is that prompt and effective treatment of a lame animal can also act as an effective *prevention* strategy, and this has become a cornerstone of lameness control in the United Kingdom (UK), with a recent New Zealand study (see page 28) highlighting that the same positive benefits can happen here.

### Identifying lameness: challenges

One of the goals of lameness treatment is to prevent permanent irreversible changes in the hoof (like bony changes, see *Figure 2*). Identifying and promptly treating lameness will prevent this from happening.

However, identifying lame cattle early remains one of the biggest hurdles to lameness control on dairy farms worldwide. Without it, an optimal outcome from treating them isn't possible<sup>2</sup>. Identifying and treating cows as soon as they become lame increases the cure rate<sup>2,3</sup> and reduces the number and severity of new cases<sup>4</sup>.

So, what's contributing to this situation?

Severely lame animals are easy to identify in a herd. They're usually at the back of the herd, barely place weight on the lame limbs and take a long time to walk back to their paddock. Most farm workers have no difficulty identifying these animals.

The problem is that once they've got to this stage, they've often been lame for several weeks. We can see an example of this in a Manawatu farm's herd, where lame animals lost, on average, 20kg of liveweight before being identified<sup>5</sup>.

On any given day, approximately 75% of clinically lame animals are walking in the milking herd, undiagnosed and untreated<sup>6,7</sup>. This has been reported in both New Zealand<sup>6</sup> and Australia<sup>7</sup>, where the percentage of lame animals identified by a trained lameness expert was compared to what the farmers had identified. From 59 herds across New Zealand, only an average of 27% of lame animals were identified by the farmer (*Figure 3*)<sup>6</sup>. In the similar study in Australia on 50 herds, farmers identified only 24% of lame animals<sup>7</sup>.

There's clearly an issue with identifying lame animals, but why is this?

### Not all lame animals are at the back of a herd

It's a misconception that all lame animals walk at the back of the herd. In the Australian study mentioned above, relying on examining the last 30% of cows walking would have missed 40% of the lame animals<sup>7</sup>.

### Definition of 'lame'

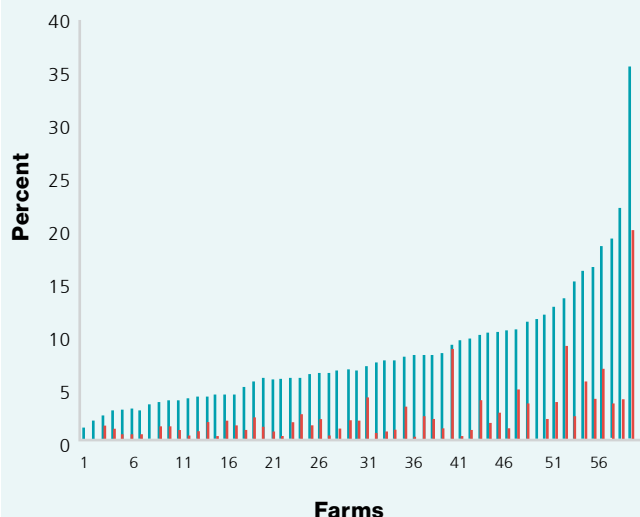
Too often, the word 'lame' has been used only for severely lame animals, while less severely lame animals are referred to with words like 'she's just walking funny' or 'they aren't walking right'. However, the latter should also be thought of as lame, not brushed off as something less serious.

### It's not a dedicated farm job – and it needs to be

The biggest barrier to identifying lame animals is the lack of dedicated procedures and plans on-farm to identify all lame cows. Just like testing animals for mastitis as they go from the colostrum to the milking herds requires dedicated procedures and plans, so does identifying lame animals.



**Figure 3.** Percentage of the herd detected as lame by trained observers (blue) and farmers (red) across 59 NZ dairy farms<sup>6</sup>.



### How can we better identify lame animals?

The best way is to lameness score them (see tools and tips below), which involves looking at specific gait factors such as weight bearing and stride length. When this is done, the moderately lame animals (LS 2) become more apparent.

Lameness scoring doesn't need to be done every day – every two weeks at high-risk times and every four weeks during the rest of the year will do the job, and the best time to do this is as the cows leave the milking platform. There've been huge improvements reported in the amount of lameness on-farm just by implementing lameness scoring on-farm<sup>4</sup>.

### Lameness tools and tips



Visit [dairynz.co.nz/lameness](https://dairynz.co.nz/lameness) to get more information and tools, including:

- our Healthy Hoof app
- an A3 lameness scoring poster for the shed
- our *Preventing and managing lameness* guide
- our lameness field guide.

### How can we ensure prompt and effective treatment?

#### 1. Get to them early

There's no point in identifying them early but then delaying the treatment of animals. Once identified, lame cows should be examined and treated within 48 hours, or within 24 hours if severely lame. In situations where you're overwhelmed by the number of lame cows, then seek help from your veterinarian and hoof trimmer. Let them do their job so you can concentrate on yours.

#### 2. Pick it up and trim it

It's essential to pick up the hoof and trim it effectively<sup>8</sup>. There's a consensus that the use of blocks (wooden, cowslips or rubber pads) should be used whenever possible to take weight off the affected claw.

#### 3. Manage the pain

Lameness is a painful inflammatory condition. Anything that reduces pain and inflammation is likely to help the cow, and it's been shown that NSAIDs (pain relief injections) are beneficial. One UK study showed that if a lame cow was identified early, her hoof was trimmed, a wooden block was applied, and a three-day course of NSAIDs was given, the cow was cured about two times faster than cows that received only a hoof trim<sup>2</sup>. Recent research, also from the UK, showed an animal was 45% less likely to be culled if she received an NSAID at the time of lameness treatment<sup>9</sup>.

#### 4. Recovery management

It's also important to manage the animal's recovery after lameness treatment. An animal can lose 61kg of liveweight during an episode of lameness<sup>6</sup>, and to add insult to injury, skinny cows are more likely to become lame. So, as well as reducing the walking distance for lame animals, it's important to give them high-quality feed in the lame herd.

### A recent New Zealand study

These steps of early identification and prompt effective treatment have recently been put into practice in New Zealand, in a (soon to be published) study carried out by EpiVets and VetEnt and co-funded by DairyNZ\*.

The study involved a total of 241 lame animals across five farms in the Waikato. Seven days after identification and treatment, 50% of these animals were no longer lame. At 18 days, 50% of these animals were completely sound. These are the fastest recovery rates of any published clinical study worldwide.



### The 3 E's to success:

1. Identify **E**arly.
2. Lift it **E**arly.
3. Trim it **E**ffectively.\*

= **BETTER CURE** and  
**PREVENTION of LAMENESS**

*\*(use blocks and NSAIDs)*

Of those animals treated, over 85% received a wooden block on the non-lame, or least affected, claw; and greater than 90% of those animals were moderately lame (rather than severely lame), demonstrating the benefits of early identification. These results suggest that the quicker lame cows are identified and cured, the quicker they'll return to normal production and improve their wellbeing. It also reduces the chances of cows being culled early and reduces the number of lame cows on the farm.

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