

June-July 2024

Inside Dairy

Your levy in action



New
equipment:
less injury

*Reducing sprains
and strains*

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DairyNZ 



Over the fence...

It feels good to be at the start of a fresh season and I imagine you will have taken the time to update your plan for the season ahead, which is what we have done too.

In a changing world we need to keep our focus sharp, so we've been looking to the challenges and opportunities ahead. In our new strategy to 2030, we've made a clear choice to increase our focus on the long term, to reduce doubling up with others, and strengthen our focus on outcomes for farmers.

It is our vision to make the levy the best investment of every New Zealand dairy farmer.

And so, we have sharpened our focus to three strategic priorities that drive nine programmes of work which we'll undertake to ensure New Zealand dairy farmers remain profitable, sustainable and internationally competitive.

Jim and I met with the *Inside Dairy* team to discuss this in more detail. You can read more in this edition on page 12, where you'll also find more details on what the strategy looks like, what it means for farmers and how we can answer any questions you have.

It's our strong belief that when farmers succeed, rural communities thrive, and New Zealand as a whole is better off.

Also, in this issue, read about how DairyNZ has been helping improve workplace productivity through the Reducing Sprains and Strains project – making calving tasks easier, safer and quicker.

Three farmers discuss their experiences trialling new gate systems developed through the project (page 6), while *Science in action* (page 25) focuses on the project's co-design approach, and how farmers were involved with it every step of the way.

As always, your feedback is welcome at
Campbell.Parker@ceo.dairynz.co.nz

Ngā mihi,

Campbell Parker
DairyNZ chief executive

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On the cover:

Waikato farmer Megan Lansdaal leads the safety charge after trialling a new calf trailer gate created as part of an innovative DairyNZ and ACC project.



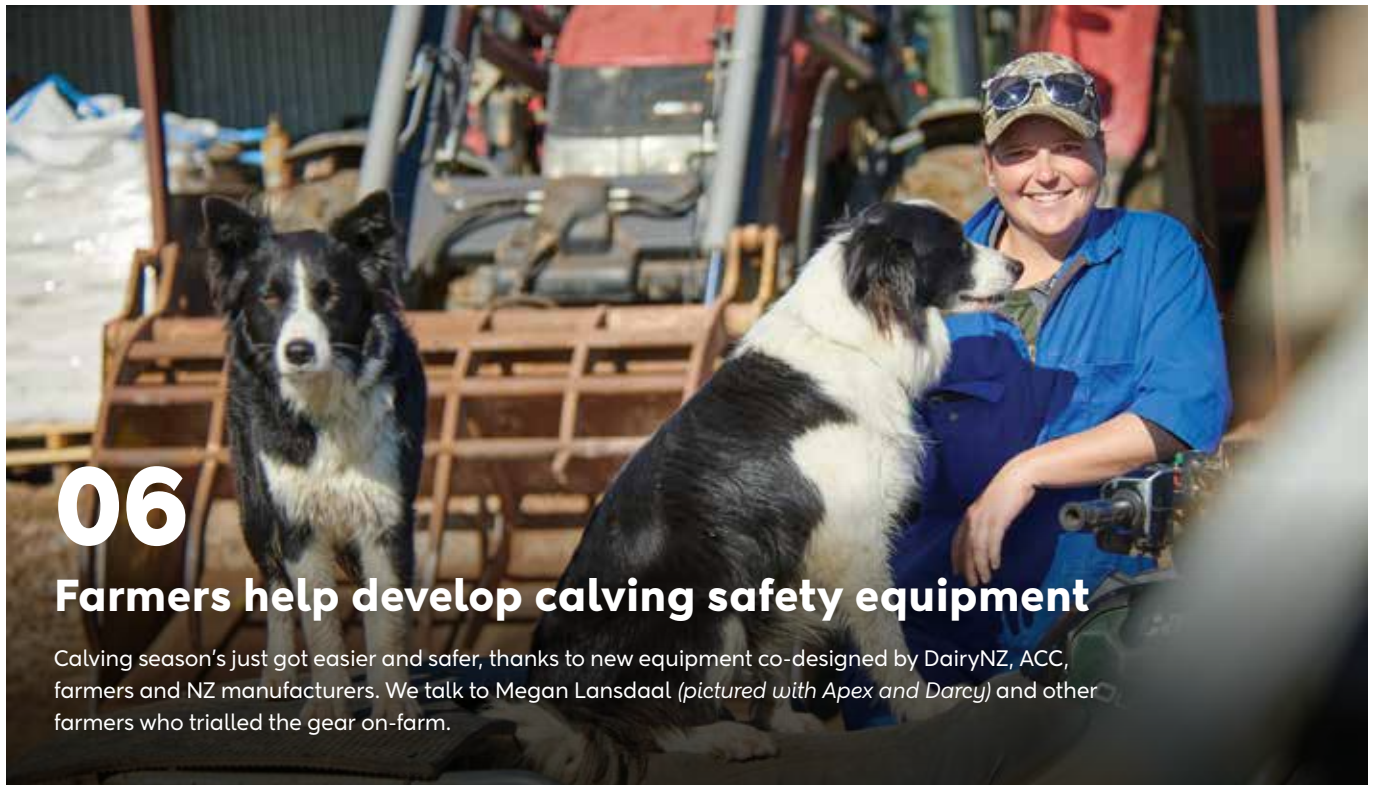
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Farmers help develop calving safety equipment

Calving season's just got easier and safer, thanks to new equipment co-designed by DairyNZ, ACC, farmers and NZ manufacturers. We talk to Megan Lansdaal (pictured with Apex and Darcy) and other farmers who trialled the gear on-farm.



Our Strategy

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A sharper focus for DairyNZ

DairyNZ's CE Campbell Parker and DairyNZ Board Chair Jim van der Poel outline our new strategy, what's changing and why, and what farmers will see as it rolls out.



25 Co-design helps reduce sprains and strains

Inside Dairy takes a closer look at the story behind the Reducing Sprains and Strains project; its co-design process, and the full range of equipment it's produced so far.



We appreciate your feedback

Email insidedairy@dairynz.co.nz or call us on 0800 4 DairyNZ (0800 4 324 7969).



To find out how to recycle the plastic wrap used to protect this magazine during postage, visit dairynz.co.nz/insidedairy

Biosecurity levy reduction

Thanks to a national effort from New Zealand dairy farmers in response to *Mycoplasma bovis* (*M. bovis*), the Biosecurity (Response – Milksolids) Levy will reduce from 2.4 cents per kilogram of Milksolids to 0.8 cents per kilogram of Milksolids from July 1, 2024.

The 66% reduction in the levy dairy farmers pay reflects the good progress made in response to *M. bovis*. While we may still see a few more cases, we are now in a surveillance phase and costs have reduced, thanks to a combined sector effort. Farmers will see the reduction automatically applied in their August milk cheque.

Find out more about the Biosecurity Response Levy and DairyNZ's commitment to the Government Industry Agreement (GIA) at dairynz.co.nz/biosecuritylevy

Same great content, different delivery

As we sharpen our focus on how we deliver value to farmers, we've made some changes to your trusted DairyNZ publication. This is our last edition in this format.

From October, *Inside Dairy* will be delivered in a larger format into every dairy farmer's letterbox in the country. We're also shifting to a seasonal, quarterly publication.

These changes will reduce costs and provide a stronger reach for our publication.

You can expect the same content, with a focus on a 'whole farm systems' approach that's relevant to the long-term challenges of the sector.

In the meantime, visit dairynz.co.nz/insidedairy for *Inside Dairy* articles and the latest news.

Benchmark your business

How can you measure your farm's performance against customisable benchmarks, such as similar system farms in your region? With DairyBase, that's how: it hosts 20 years' worth of data.

Use it to help better understand your system and its performance, find out what's working well, and to identify opportunities for improvement.

Get started at dairynz.co.nz/dairybase – or if you've done that already, it's time to send us your completed Level 1 form, so email it to us today at dairybase@dairynz.co.nz

Dairy sector pride

DairyNZ is proud to support the 2024 New Zealand Dairy Industry Awards, Ahuwhenua Trophy and Ahuwhenua Young Māori Farmer Awards. Winners were announced in mid-late May – see below.

NZDIA (more details at dairyindustryawards.co.nz)

- Manawatū farmers Will Hinton and Kali Rangiawha (National Share Farmers of the Year).
- Kieran McCahon of Northland (National Dairy Manager of the Year).
- Kirwyn Ellis from Waikato (National Dairy Trainee of the Year).
- James and Debbie Stewart, Dairylands, Manawatū (2024 Fonterra Responsible Dairying Award).

Ahuwhenua Trophy

(more details at ahuwhenuatrophy.maori.nz)

- Wairarapa Moana ki Pouākani Inc. (Ahuwhenua Trophy, Dairy).
- Ben Purua from Waimakariri Lands (Young Māori Farmer Awards, Dairy).



NZDIA winners Kirwyn Ellis, Will Hinton, Kali Rangiawha, Kieran McCahon.

Farmers focus on animal care



A decade of working with farmers to understand their animal care practices has seen ongoing change and improvement, say DairyNZ's senior animal care specialist Penny Timmer-Arends and scientist Stacey Hendriks.

DairyNZ's annual survey of animal care practices is part of our long-running Animal Care Consultation project. It helps to set research questions, guide our extension activities and inform policy submissions to Government.

We visit around 250 farms each year, chatting to farmers about how they're caring for their stock. The survey's consistent questions look at practice change over time, while new questions are introduced based on current trends and conversations. Recent key improvements relate to calf care and preparing stock for transport.

Colostrum from the first milking after calving is crucial for newborn calves, as it provides antibodies that support their immune system and overall health. Failure in passive transfer of immunity can increase calves' susceptibility to infection and disease and reduce growth rates. To ensure that newborn calves are receiving sufficiently high-quality colostrum, a Brix refractometer can be used to measure the antibody level in colostrum.

We've consistently tracked Brix refractometer testing since 2017, after findings from research supported by DairyNZ found failure in passive transfer of immunity occurred in 33% of 3819 calves tested. These findings informed extension work by DairyNZ, Dairy Women's Network and veterinarians, promoting the use of Brix testing.



Surveys show the percentage of farms using a Brix refractometer to measure the antibody level in colostrum increased from 6% (2017), to 36% (2022).

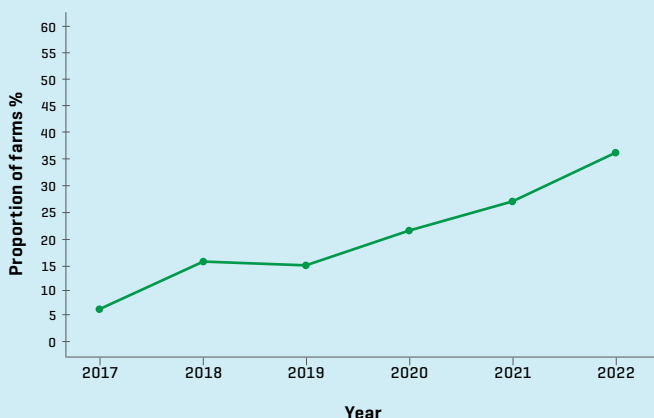
Figure 1 shows the increased use of Brix testing on farm (from 6% in 2017 to 36% in 2022) captured in our animal care surveys, showing how quickly farmers adopt new management practices in light of new evidence.

What has remained constant is the pride farmers have in their stock, and their willingness to talk openly about animal care and adopt new practices. DairyNZ will also continue to support farmers to provide for cow wellbeing while remaining profitable. This also recognises that looking after our animals is core to our sector's reputation as producers of high value, ethically produced dairy.

Find out more about animal care and management at dairynz.co.nz/animal

Proportion of farms that used Brix refractometers to test colostrum across 1752 New Zealand farms surveyed by DairyNZ between 2017 and 2022.

FIGURE 1.



Survey highlights

- Farms are showing initiative in managing heat stress using multiple practices (e.g., flexible milking times, reducing the distance cows walk during peak heat periods, and using sprinklers and fans in the milking shed).
- Preparing cows for transport has improved. Over 90% of farmers ask about journey length and are present to assist with loading.
- The number of farms blood-testing calves for passive transfer of immunity increased seven-fold between 2019 and 2022.

Progress made advocating for science-based policy

An overview of DairyNZ's efforts at Government level on behalf of farmers, the progress made so far, and what's lined up next.



Since last year's election, DairyNZ's Board and management team have been actively meeting with Ministers and Government officials in Wellington. We've been giving them our view on priority areas for easing the regulatory burden on dairy farming and accelerating our progress as a dairy sector.

Our approach has been to highlight issues with existing policies but also to put forward scientifically based practical solutions to influence those policy settings. This needs to be in a way that leads to fair pragmatic policies that allow our farms and the sector to continue to progress but in a more sustainable, profitable way.

Our current advocacy and policy work is focused on priorities identified by dairy farmers as issues that require urgent attention. Here is a summary of these priorities, our progress so far, and (where needed) what our next steps will be.

Minister for Agriculture Rt Hon. Todd McLay and DairyNZ Chair Jim van der Poel take a walk in each other's shoes during a recent Wellington visit.

Establishing a rural regulatory review panel

Progress so far: Minister and Ministry of Regulation has been announced and first regulatory sector review confirmed. Next, we'll provide input where we can to ensure this addresses issues facing farmers.

Resource management reform

Progress so far: The Natural and Built Environment and Spatial Planning Acts have been repealed. Fast-track consents processing is underway as is work on wider Resource Management Act (RMA) reforms.

Improving freshwater policy



Progress so far: Freshwater National Policy Statement (NPS) is to be replaced. Amendments to Freshwater Farm Plan regulations are pending. We continue to advocate for simplified processes for Freshwater Farm Plans, including recognition of existing industry plans delivered in partnership with dairy companies to reduce complexity, cost and duplication for farmers. Regional council engagement is ongoing.

Climate targets and emissions pricing



Progress so far: Independent review of methane science and targets announced in addition to existing Climate Change Commission review of targets. Emissions Trading Scheme (ETS) has been amended to remove references to pricing agriculture. Regional council engagement is ongoing, as we do not support regional councils setting their own greenhouse gas targets.

Strong biosecurity systems



Progress so far: There are no confirmed *Mycoplasma bovis* (*M.bovis*) cases currently. OSPRI is taking over the *M. bovis* surveillance phase. A Memorandum of Understanding (MOU) has been signed on foot and mouth disease. A reform of Biosecurity Act is still needed.

Where to from here?

We're making headway. It's pleasing to see the Government is in the process of addressing areas we've raised as critical for us to make progress as a sector. We'll provide regular updates as further progress rolls out across our ongoing advocacy efforts on behalf of farmers (*sidebar, right*).

You can also find out how DairyNZ's science expertise is informing pragmatic policy changes that will help dairy farmers continue to improve how they farm sustainably, while still achieving profitability.

Visit dairynz.co.nz/advocacy

Reviewing regulation settings for new technologies

Progress so far: Legislation is to be passed to reform rules on gene technologies. It's still to be confirmed whether a review of wider regulations addressing non-gene technologies will take place.

Workforce development



Progress so far: The Accredited Employer Work Visa wage threshold has been paused at \$29.66/hour, rather than increased to the new median wage. Further work is needed on improving immigration settings and other workforce issues.

Next key announcements

There are four areas of particular interest to dairy farmers which are currently being considered by Government. These are in relation to:

- introducing legislation to amend the RMA to clarify application of the National Policy Statement on Freshwater Management (NPS-FM), in relation to individual consents for freshwater
- introducing legislation to suspend the requirement on councils to identify and adopt new Significant Natural Areas (SNAs)
- finalising policy to keep agriculture out of the ETS
- commencing an independent review of the methane science and targets for consistency with no additional warming from agricultural methane emissions.

Farmers help develop calving safety equipment





Three farmers talk about trialling new equipment tipped to improve on-farm health and safety and make the job easier this calving season.

Preventing on-farm injuries, even relatively minor ones, is essential to avoid lost time and productivity, especially when the days get busier over calving. *Inside Dairy* spoke to three farmers who've tested two new gate systems developed from DairyNZ and ACC's Reducing Sprains and Strains project*, which aims to make calving tasks easier, safer and quicker (see sidebar, next page).

Megan Lansdaal is a 21% sharemilker, running 350 Jersey cows on her parents' 110ha farm in Motumaoho near Morrinsville, Waikato. Neither Megan nor her staff have had major strains or sprains during calving, but a day after calving last year, she broke her leg while running a dog trial.

"I'm just trying to get back to work. It's been an absolute nightmare," Megan says. "I struggled to let someone else do my job. Avoiding injury is one of the most important aspects of farming."

Megan says asking for help to avoid risks isn't easy. "Farmers are stubborn. We want to be independent. But we also don't want to let our cows down."

Then she came across the project's calf gate systems at Fieldays® at Mystery Creek last year.

"I'm always looking for ways to improve and make farm life easier," explains Megan. "So, when DairyNZ asked me to test the Easy-Entry Calf Trailer Gate, it was a no brainer."

**The project is co-funded by ACC's Workplace Injury Prevention Grants Programme and DairyNZ. For more details, and to view the full range of products being developed, see our Science in action story on pages 25-29 or go to dairyNZ.co.nz/sprains-strains*



Gateways to health and safety

One of this project's aims was to develop innovations into retail products for NZ farmers. As an industry-good levy organisation, DairyNZ does not receive any commercial gain, so the project team approached Kea Trailers and Gallagher to help develop and produce these spring-loaded, self-closing gates.

Easy-Entry Calf Trailer Gate

Loading calves is easier, safer and quicker. Reduces risk of shoulder and back injuries when handling calves. Fits most existing Kea trailers and custom sizes can be made to order.

Contact KEA Trailers **0800 869 532** and **sales@keatrailers.co.nz**

Easy-Access Calf Pen Gate

Move hands-free between pens while carrying buckets or moving calves. Reduces risk of back or leg injuries from lifting or climbing over gates. Easy to install in existing calf pens.

Register your details on the waitlist with Gallagher **am.gallagher.com/en-NZ/Support/Contact-Us**

Megan (with farm worker Liam Johnson) says the new gate is "right up my alley, as they've designed it to try and reduce twisting and turning while lifting calves".

Trialling the trailer gate

Research shows sprain and strain injuries make up around 40% of dairy farm injuries, with the highest risk period occurring during spring calving season. On average, those injured needed 12 days off work, and around 27 days to fully recover.

Before taking part in the project, Megan had been using a calf trailer with a sliding gate. "You'd slide it open, then have to duck your head under a rail as you loaded a calf – not easy."

She'd also put her foot on a bottom bar to get in and out of the trailer. Eventually the bar bent and Megan ended up tussling with the gate to get it to slide.

The Easy-Entry Calf Trailer Gate however, has one-way saloon doors to simply push a calf through. The springs return the doors to their original position, so calves can't escape.

Megan says the new gate is "right up my alley, as they've designed it to try and reduce twisting and turning while lifting calves. Otherwise, your lower back takes a hiding during calving."

"Whether you're lifting calves, twisting, putting them on the trailer or feeding them, it's not hard to hurt yourself. Each little thing to get an improvement is something everyone should be looking at."



Sophie Johnson (with husband Stuart) says "...it's cool to see innovation in this area, simple things can make a difference".



If I could have one of those gates between every single calf pen, I'd be stoked!

Input to innovation

Farmer feedback on the equipment trials led to various improvements.

When Megan was trying out an early version of the trailer gate, a bottom bar on it snapped – so the project team engaged Kea Trailers to create a newer, tougher version – and re-engineer one-way gates to swing 180°, to make unloading even easier. They also increased the height of the top bar, widened the gates (so just one gate could be used if a calf was sitting behind the other), and made the gate hinges more robust.

Megan's advice for staying injury free during calving is to stop and think actions through and to not just run off and do a task you remember needs doing.

"It's very easy to put your animal's health ahead of yours," she says. Her advice for looking after yourself? "Make sure you get enough sleep and eat well. A slow cooker is your best friend. Just chuck food in and let it cook. I have the best beef stroganoff recipe for the slow cooker."

Latching onto innovation

Sophie and Stuart Johnson milk 550 Holstein-Friesian cows outside Tirau in the Waikato. They're in their second season as 50:50 sharemilkers. Sophie was pregnant during their last calving season.

"Anything that can help with manual handling is much appreciated. The Easy-Access Calf Pen Gate made life easy. If I could have one of those gates between every single calf pen, I'd be stoked. You can push calves through one-by-one, without fiddling with latches."

Sophie also tested the Easy-Entry Calf Trailer Gate: some days she loved it, other days she didn't.

"When we only picked up a handful of calves, it was great. It's easy for anyone of any size to use."

For full trailer loads of calves though, there wasn't always enough space to push the door inwards. "The calves would shuffle around, getting in the way of the swinging gate. Re-arranging them felt like an extra thing to do, and you're already holding the next calf to load."

Overall though, she's very positive about being involved in the trial. "It's cool to see innovation in this area, simple things can make a difference."

Her tips for calving time? "Pre-prep meals and freeze them in advance. And make sure your gumboots are comfy for those long days!"*

(Get more tips on page 10: see 'Keep a spring in your step'.)



Jeff Lucanas, assistant farm manager, using the pen gate on the Johnson's farm. It's self-closing saloon doors mean he can move hands-free when carrying buckets and shifting calves.



1. *Jan Cabigas (farm assistant, left) and Jeff Lucanas (assistant farm manager) put the trailer gate through its paces. Feedback on the equipment trialled by several farmers during the project led to various improvements.*
2. *The Johnson's other assistant farm manager Ruel Garces loads a calf through the calf trailer gate.*

Timesaving too

Marcus Graham favoured the Easy-Entry Calf Trailer Gate because it would fit his existing calf trailer. He runs 460 cows across 145ha in Ōhaupō. A few years ago, Marcus rolled his ankle, walking down the cowshed's pit stairs. He had to wear a 'moon boot' and others had to do the tasks he couldn't, so he's keen on anything that makes working on-farm safer.

"The new trailer helps you avoid a lot of twisting and turning while loading. It's better for the calves too," says Marcus, who's also sold on the gate's time-saving benefits. His feedback on the equipment's performance over rough terrain helped project developers make it more robust. He also trialled the Easy-Access Calf Pen Gate, which he says made life much easier, although his feedback was that he'd like to find a way to keep the one-way pen gate open.

"It's good to know my feedback's being used to get the equipment up to spec so it can meet everyone's needs and help prevent injury," he says, adding that ACC's current campaign slogan is always on his mind when making decisions around on-farm safety.

"Have a bit of a 'hmmm' moment. That's always good."

Keep a spring in your step

1. **Team up:** Get help when lifting heavier calves.
2. **Use specialised equipment:** Use a trailer designed for transporting calves.
3. **Work smarter, not harder:** Pipe milk into calf feeders instead of carrying buckets.
4. **Stay organised:** Tuck milking shed hoses away after use, to prevent tripping.
5. **Choose the right gear:** Invest in footwear with great grip and ankle support.
6. **Stay informed:** Hold brief weekly meetings to identify and address potential on-farm hazards.

Check out these websites:

- dairynz.co.nz/health-and-safety
- farmwithoutharm.org.nz
- farmstrong.co.nz (Calmer Farmer)



Hear more about this project's designs and prototypes and the farmers who've tested them from DairyNZ senior scientist Dr Callum Eastwood in episodes 61 and 77 of our *Talking Dairy* podcast at dairynz.co.nz/podcast

Or, point your phone's camera at the QR code (left).



Sprain and strain injuries make up around 40% of dairy farm injuries.



Jan Cabigas shows the correct way to lift a calf to prevent injuring himself, while supporting the animal at the same time.



A sharper focus for DairyNZ

Chief Executive Campbell Parker and DairyNZ Board Chair Jim van der Poel outline how an increasingly customer-driven marketplace and accelerating change is driving DairyNZ's new strategy.

Jim van der Poel (left) and Campbell Parker say the strategy's priorities are "incredibly important to dairying's past and future".

Over 15 years, DairyNZ has earned a unique position as a credible, science-first and independent industry good body.

This is a solid foundation, and as the world changes, we must change too. Farmers expect us to focus on what matters and where we can add the most value, so we're sharpening our focus to better meet the changing needs of our farmers and sector.

In our new strategy to 2030, we've made a clear choice to increase our focus on the longer term. We'll focus on three strategic priorities covering nine programmes of work (see summary, next page). These aim to ensure New Zealand dairy farmers remain profitable, sustainable and internationally competitive.

Levying value for farmers

"The strategy's vision is to make the levy the best investment of every New Zealand dairy farmer," explains DairyNZ CE, Campbell Parker. "That's very important to us.

"We understand the landscape in which our farmers are trying to do business. We want to be really clear about what trends we're facing, and to identify the things we need to focus on to ensure we're progressing a positive future for NZ dairy farming.

"That's where it starts, with DairyNZ's role delivering tangible outcomes to our farmers every day. There's also a massive opportunity to reduce duplication in the sector, by sitting down with our partners to sort that

out and achieve a more united voice. The strategy's new approach will also enable farmers to get better access to DairyNZ's 'subject matter experts', for example, scientists, researchers and policy people."



On-farm productivity is what drives the difference between income and expenses, it's what helps farmers support their families, their business goals, their communities and everything else.

"Farmers should expect us to be looking hard at what we're doing and how we can add the most value for them from the levy," agrees DairyNZ Board Chair Jim van der Poel. "The events we run, the resources we provide and the science we do, should all be targeted to that objective and be focused on long-term outcomes."

Profit is key to sustainability

Campbell says the new strategy also demonstrates 'the DairyNZ difference' through its focus on the core role of science and research in solving some

of the really complex problems, and its use of a 'whole farm systems' lens.

"That's something unique to DairyNZ, that we take that approach in working with farmers to understand the impacts within their farm systems, including profitability."

The three strategic priorities of accelerating on-farm productivity, being adaptable and resilient, and being sustainable and competitive, also acknowledge profitability as an essential part of the big picture, adds Jim.

"On-farm productivity is what drives the difference between income and expenses, it's what helps farmers support their families, their business goals, their communities and everything else.

"It keeps them internationally competitive, so our products continue to fill those niche markets they're in now. If farmers can't maintain and improve their productivity over time, then their businesses become less sustainable. So, profitability must be an absolute priority to achieve sustainability.

"Also, having farms that are adaptable and resilient to things like climate change, to changing market requirements – farmers need to be able to respond to those. The third priority, being sustainable (and competitive), is also not just about the environment. It's about being sustainable for the people, for the environment, for the whole farm system."



Our purpose

Progressing a positive future for New Zealand dairy farming

Our vision

To make the levy the best investment of every New Zealand dairy farmer

Our strategic priorities



Accelerating on-farm productivity

World-leading animal genetic gain

Improved forage gains

Increased workplace productivity



Powering more adaptable & resilient farms

Future-fit farm systems

Credible evidence

Strong biosecurity systems



Enabling sustainable & competitive dairying

Healthy waterways

Enhanced animal care

Reduced GHG emissions

Our key activities

With farmers, we deliver:

A comprehensive foundation of farming knowledge & solutions

Insightful & targeted benchmarking

High-impact partnerships

Meaningful connections

For the dairy sector we:

Progress research & science

Provide industry analytics & insight

Inform pragmatic, evidence-based policy

Develop targeted solutions

Lead collective action

The DairyNZ difference

We are a preferred partner because we are independent and represent all dairy farmers

We have world-class expertise relevant to our complex industry challenges

We take a farm systems approach in how we work with farmers

Powered by our people: One team at DairyNZ, working for every New Zealand dairy farmer

"We know that the world needs high quality food and that NZ farmers do a very good job in producing that," says Campbell. "Dairying has been and will continue to be an important part of NZ's success story. At DairyNZ, we want to earn the right to continue to support farmers by delivering value to them. To me, that's the exciting thing."

More information and FAQs

- We've provided an overview of our strategy and Frequently Asked Questions (FAQ) online at dairynz.co.nz/strategy
- Over the coming months DairyNZ's CE, Board members and key DairyNZ staff will also be getting out and about to talk to farmers about it.

Animal care central for farmers and consumers



Our recent research shows our farm systems provide a solid foundation for good animal wellbeing, but there's room to improve says DairyNZ's principal scientist Jenny Jago.

Animal wellbeing has always been important to farmers, because of its link to performance and farmers' connection with their animals. In recent years, animal welfare and ethical farming practices have become more important for customers, consumers and the public, and many want proof that their expectations of animal care and farming practices are being met. Good animal care and welfare are also increasingly associated with food quality and healthier products.

Consumers and the public want to know that animals are happy, healthy, well-fed, and able to engage in natural behaviours in spacious environments. This aligns with the scientific understanding of animal welfare, which encompasses biological functioning/health, emotional state and natural behaviours.

The research

DairyNZ researchers delved into the latest animal welfare science to identify aspects of New Zealand farming systems that contribute

positively to a dairy cow's quality of life and pinpoint areas that need attention.

We collaborated with animal welfare experts to develop a method to assess farm attributes based on their capacity to offer animals positive, neutral or negative experiences – recognising that these shape an animal's overall quality of life.

What did we find?

Overall, NZ's pasture-based farming systems provide a solid foundation for ensuring a good quality of life. Key attributes include preventative health measures, provision of high-quality feed, adequate space, good ventilation and natural lighting, and well-designed infrastructure. Dairy cows were benefiting from having options to express their natural foraging behaviours, having social contact with their peers, and certainty around their daily routine.

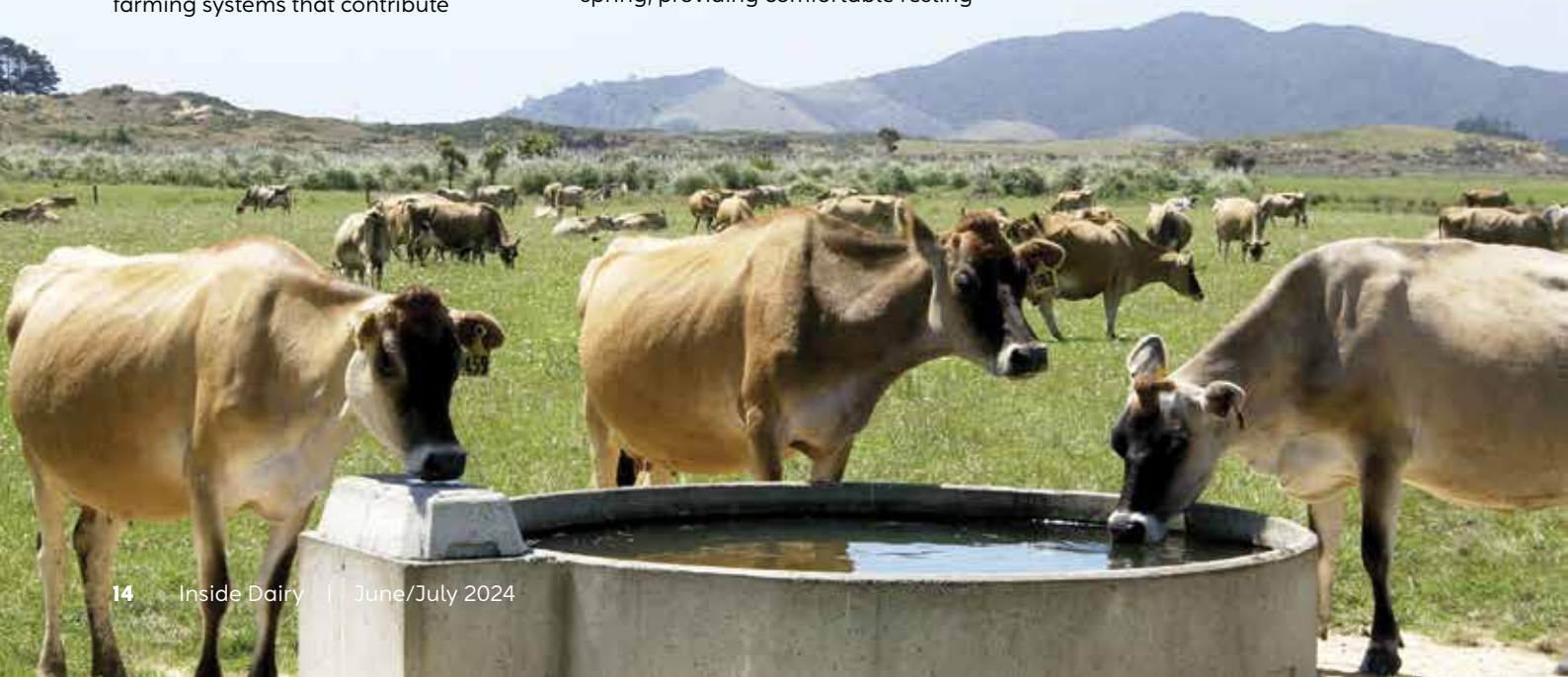
However, certain aspects pose a risk, such as high workloads and managing labour shortages during spring, providing comfortable resting

surfaces in winter, and providing sufficient water and minimising heat stress in summer.

While these challenges identified in our research have also appeared in public and academic discussions, less attention has been directed towards highlighting the features of our farming systems that promote positive animal welfare outcomes (e.g., ability to graze/forage, opportunities for exploration and social interactions and engaging in herd synchrony), especially when compared to our international competitors.

Regardless, it's good to know that our recent research has confirmed that NZ's pasture-based farming systems do provide a strong foundation to build on, as we continually improve animal welfare standards to ensure our animals have a good quality of life.

Find out more about animal welfare and get tips from us at dairynz.co.nz/animal/welfare



Community connection vital

Many dairy farmers are sharing farming knowledge and wisdom that helps everyone get ahead while connecting rural communities. Here's how that looks for two of them.

Neil Bateup from Te Hoe, Waikato, chairs the Rural Support Trust and the Waikato primary sector adverse events group. Marv Pangborn from Selwyn, Canterbury is involved in a Grassroots Dairy Graduate Management Programme in Canterbury, supporting university graduates to have a successful start in farming.

Neil says farmers talking to each other is hugely important. "Discussing what is and isn't working, and how to manage challenging situations, is a great way for farmers to support each other. Field days, DairyNZ events, social gatherings and one-on-one catchups are invaluable ways of connecting. Young farmers learn a lot from older farmers too."

With a 50:50 sharemilker now on Neil and Eileen's farm, Neil has more time for the Rural Support Trust. He'd



Marv Pangborn
Photo: Farmers Weekly

seen so many people helping others in the rural community. He was also inspired by local farmers in the 1980s rallying to support each other when agricultural subsidies were removed, setting up local volleyball games so farmers could connect off-farm.

He says farmers connecting with each other and organisations like DairyNZ and Rural Support Trust is a great idea. "Farmers are incredibly generous with their time and knowledge."



Innovation, research and practical solutions are so important.

Marv and Jane Pangborn's 225ha farm is operated by daughter Lauren and son-in-law Liam Kelly. As a ninth-generation farmer (Marv's forebears also farmed in the USA – in New York and the mid-west), he says it's great to have a succession plan in place.

He's been a partner farmer in DairyNZ's Meeting a Sustainable Future project, and was a farm management lecturer at Lincoln University for many years. He enjoys helping develop future leaders.

"When I see young farmers on Country Calendar, in the media and



Neil Bateup

supporting other farmers, I get a great deal of satisfaction."

Marv says a key value gained from DairyNZ and farmers working together on research is that the results are shared with farmers in a way that's practical to implement on farm.

"The history of farming in New Zealand is one of adaptation and change and we'll continue to adapt into the future. That's why innovation, research and practical solutions are so important."

Find out more about how to support your farming community:

- Rural Support Trust:
Phone **0800 787 254** or visit **rural-support.org.nz**
- DairyNZ:
Phone **0800 4 DAIRYNZ (0800 4 324 7969)**
or visit **dairynz.co.nz/people**

Read the full story online at **dairynz.co.nz/connection-vital**



Handle with care

During and after calving, both cows and people are vulnerable to injuries and impaired decision-making. Here's how you can reduce risks and keep everyone safe.

Cows have good long-term memories so it's essential they don't have any distressing experiences from the get-go. Getting heifers used to the shed and being handled before they calve helps reduce their fears at calving time. That makes them easier to milk and reduces the risk of injury to them and you.

Train your heifers for quiet milkings

- Aim for 3-7 visits to the shed.
- Start slowly and build up to having the machines on, holding the heifers in the bales, and teat-spraying them.
- Work calmly and gently around them.

Things to be aware of

Cows:

- Loose ligaments help the calf come out, but they create risky joints too.
- Inflammation helps the uterus return to normal but it also makes hooves fragile.
- Udders are often swollen and sore.
- Heifers are doing lots of things for the first time, which can be quite scary for them. This can make them difficult to move, handle, and milk out.

People:

- Some team members can be out of practice and unfit.
- They can also be tired and busy.
- New staff are doing lots of things for the first time.

Stockmanship training

- Good stock handling requires both skill and empathy.
- Develop a policy with your team on how stock is handled on-farm.
- Use heifer training to reinforce how you expect the team to handle difficult animals (including avoiding handling tails, as this can cause them injury).
- Encourage employees to have favourite cows. When we think about something as an individual rather than a part of a group, it taps into our emotions and increases empathy.
- Reducing stress and risk by planning and preparing with your farm team will increase work efficiency, reduce stress and injuries, and keep everyone safe at this busy time of year.

Find out more about stockmanship at dairynz.co.nz/stockmanship

You'll also find tips for setting up for calving online at dairynz.co.nz/calving

Or, point your phone's camera at the QR code (right).



Does colostrum colour indicate quality?



Methven dairy farmer Jilly Haywood loads colostrum into a Brix refractometer.

The deeper yellow your cows' colostrum is, the better it's quality, right? DairyNZ's senior animal care specialist Penny Timmer-Arends digs for the truth behind the gold.



Colostrum, often referred to as 'gold colostrum', is the first milk a cow produces after calving. A cow can't transfer antibodies to the foetus while she's pregnant. Instead, gold colostrum provides maternal antibodies to the newborn calf to help it fight disease. This passive transfer of immunity is important for calf health, growth, and lifetime productivity in replacement heifers.

What's in colostrum?

Colostrum is a mixture of factors that provide immunity and nutrition for the calf including those below.

- Antibodies (immunoglobulins) – IgG, IgM and IgA.
- Antimicrobial factors.
- White blood cells.
- Growth factors.
- Fat.
- Vitamins.

It's high in fat and contains five times as much protein as milk. The beta-carotene in the fat gives colostrum its yellow colour. Darker yellow colostrum

has more fat, but it may not have a sufficient level of antibodies present.

Assessing colostrum quality

Colostrum quality isn't about colour, it's about antibody concentration, particularly IgG. High-quality colostrum has an IgG concentration of greater than 50 milligrams of IgG per millilitre. This high level of IgG increases the protein concentration of the colostrum, which can be checked using a Brix refractometer (see photo below left).

A Brix score of 22% is the cut-off for detecting good-quality colostrum (equivalent to IgG above 50mg/ml).

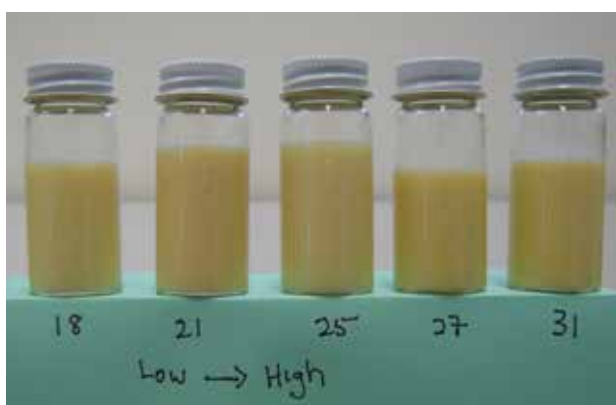
Newborn calves should be given the freshest, highest-quality colostrum. Lower-quality colostrum still provides good nutrition for older calves.

Learn more at dairynz.co.nz/colostrum

Or, point your phone's camera at the QR code (right).



There is almost no visual difference between low quality colostrum (Brix reading 18-21) and high-quality colostrum (Brix reading 25-31).



The 4 Qs of colostrum

Feed calves with the highest quality colostrum available, as soon as possible after birth.

- **Q**uality - greater than 22% Brix reading.
- **Q**uickly – within 6-12 hours of birth while the calf's gut can still absorb the antibodies.
- **Q**uantity – 4-6L across the first two feeds.
- **S**queaky clean – collect, transport, and preserve colostrum in clean containers.

Myth

The more yellow colostrum is, the better it is for calves.



BUSTED

While the fat content of the milk gives it its colour, it's the antibodies that matter most when it comes to achieving passive transfer of immunity.



Pasture still key profit driver

DairyNZ farm systems specialist Chris Glassey explains why the amount of pasture eaten per hectare is still a major factor behind farm profitability.



In our recent analysis across 2100 New Zealand dairy farms over 15 years using DairyBase data, it's clear that more pasture eaten is associated with more profit (see sidebar, Figure 1). It's therefore important to identify opportunities to increase pasture eaten, and avoid decisions that might reduce it.

Additional pasture eaten can result from different sources (see below) and the cost depends on the source and circumstances of individual farms; no single cost figure can be readily applied across all sources of feed. However, DairyBase evidence strongly suggests that pasture remains the cheapest source of additional feed.

Assessing the cost of additional pasture eaten

All attempts to increase pasture eaten should be underpinned by determining the most appropriate calving date and stocking rate for the farm.

1. Grazing management costs (eat more, least cost)

At an operational level (daily tasks and decisions), the costs associated with increasing pasture eaten include upskilling the farm team; and time allocated to grazing management (such as identifying and monitoring appropriate pre- and post-grazing

pasture mass targets for the farm and decisions for when targets are not met). These come at a comparatively low cost and might involve little or no extra capital.

2. Basic input costs (grow more, moderate cost)

The next level is to ensure maximum pasture growth, using additional inputs such as fertiliser, weed control, and re-grassing paddocks; and/or applying technologies for saving time, improved record keeping and tracking individual paddock performance.

Some supplement use may be justified to help maximise growth of pasture (e.g., preventing over-grazing or extending the rotation length in autumn and winter). It's important to apply the basic steps of grazing



In order to increase profit, it's important to identify opportunities to increase pasture eaten.



DairyBase evidence strongly suggests that pasture remains the cheapest source of additional feed.

management and basic inputs first before relying on supplements and cropping.

3. Cropping on-farm (grow more, high cost)

Compared with pasture, well-planned cropping programmes (e.g., maize silage grown on the milking platform), can add to annual dry matter grown per ha.

High levels of skill and management are needed though, to reduce risks and reliably turn the extra DM into profit. However, there are very few successes.

4. Buying in feed (purchase more, high cost)

Imported Supplement Eaten is not a key driver of profit (see sidebar, Figure 2). This graph from DairyBase tells us that the profitability of imported feed averaged just \$100 per tonne, but

there was a huge range and a very weak relationship with profit.

Shifting focus to imported supplements and maximising milk output also has risks for Operating Profit and costs of production, due to extra labour/skills needed, repairs and maintenance requirements, and depreciation. Getting basic grazing management steps and inputs sorted first should be the priority, as returns for imported supplement are highly variable. Should pasture eaten per ha/year drop when supplements are added, costs are twofold: the loss of cheaper pasture feed, replaced by more expensive imported feed.

5. Acquiring more land (high cost)

When no more grass can be grown or eaten on-farm, farmers can consider acquiring more land (buying or leasing) for growing additional pasture or crop. Costs should be assessed against options 1 to 4 above: i.e., the cost of supplementary feed should be compared with the option of purchasing additional land.

So, when considering increasing your feed supply, ask yourself: can your cows eat more, can you grow more, or do you need to buy more? This is an important step in a volatile environment when businesses require a high return for every dollar invested.

More info

- Find out more about pasture at dairynz.co.nz/feed and use our pasture eaten calculator at dairynz.co.nz/pasture-eaten
- Find out more about the importance of 1500kg/DM residuals in pages 6-9 in *Technical Series September 2016* – visit dairynz.co.nz/resources
- You can also check out DairyNZ's Pasture Potential Tool at dairynz.co.nz/pasture-potential

Or, point your phone's camera at the QR code (right).



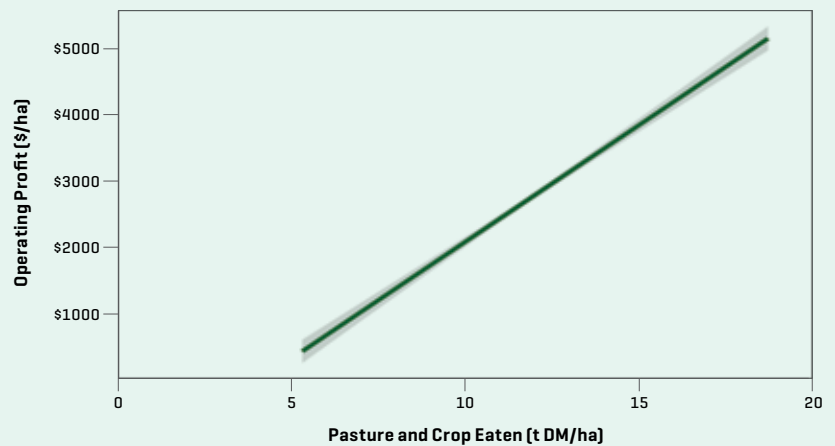
Our DairyBase analysis

In analysing DairyBase data collected from 2100 New Zealand dairy farms over 15 years, we found an additional \$350 Operating Profit per ha/year for each additional tonne of pasture eaten per ha/year (Figure 1).

In future years, this additional profit has the potential to become a large amount of money if the high pasture eaten figure is repeated year after year.

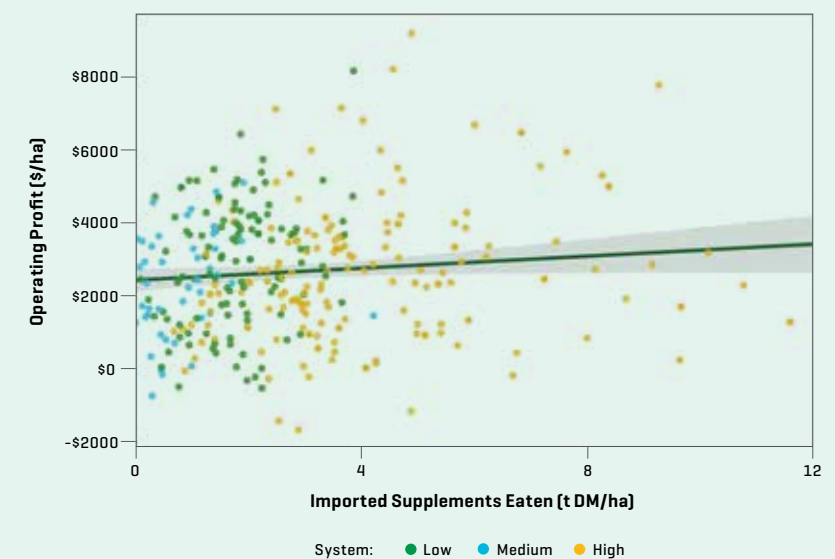
Our 2022/23 analysis also showed that the amount of supplement used by a farm is not a key driver of profit (Figure 2).

FIGURE 1. Relationship between Pasture and Crop Eaten and Operating Profit.*



*An increase in Pasture and Crop Eaten by 1 tonne of dry matter (DM) per ha/year increases Operating Profit by \$350 per ha/year (i.e., Operating Profit = -\$1400 + \$350 per tonne of Pasture and Crop Eaten). (Source DairyBase™, 2008-2022, using data from 2100 NZ farms. Inflation-adjusted milk price across this period was \$7.62/kg MS).

FIGURE 2. Relationship between Imported Supplements Eaten and Operating Profit (2022/23 analysis).**



**As Imported Supplements Eaten increases, there is little change in Operating Profit \$/ha (Y axis) across all these farms. For every tonne/ha of imported feed, profit increased by \$100: when no supplement was fed, Operating Profit was \$2400/ha.

Tech and the transition cow



Wearables are providing another source of information for farmers to fine-tune their transition cow practices, as DairyNZ's senior animal care specialist Penny Timmer-Arends explains.

The transition period – the three weeks either side of calving – is one of the most important periods of a dairy cow's life. A calved cow has a sudden, large increase in nutrient requirements due to milk production that's not matched by the same increase in her nutrient intake.

Alongside the high metabolic demand during calving, changes to a cow's immune system increase her risk of metabolic and infectious diseases. These can affect future reproductive performance.

Wearable technology is becoming increasingly popular. DairyNZ's 2023 technology survey found 16% of herds are now fitted with collars, ear tags or rumen sensors¹ compared to just 3% in 2018. Most farmers were using wearables to automate heat detection, but there is interest in using

rumination data to optimise transition cow care.

This technology can play a useful role in optimising transition cow management by allowing farmers to track rumination and eating patterns. Greater daily rumination time has been associated with reduced disease risk, increased milk production and better reproductive outcomes^{2,3}. Some farmers are using wearables to follow cows' recovery after calving, tracking a lift in rumination before putting them into the main milking mob.

While wearables provide a new way for farmers to manage at-risk cows through the transition period, it is important to focus on the key practices of good transition cow management through appropriate planning, good stockmanship, and careful observation to ensure a

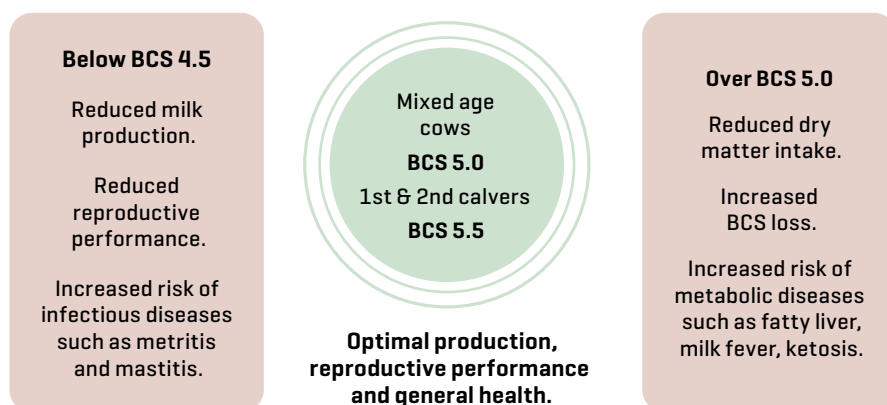
smooth transition to lactation. This includes supplementing cows with minerals before and after calving, and actively managing cow condition to avoid the negative effects of not achieving Body Condition Score (BCS) targets (see Figure 1).

If you already have wearables and want to hone your transition management, talk to your veterinary clinic or technology provider.

Find out more about transition at dairynz.co.nz/transition-cows

See page 29 for reference list.

FIGURE 1. Effects of not meeting BCS targets at calving.



What's next for wearable research at DairyNZ?

While heat detection is one aspect of herd fertility, using wearable data for better animal health and feed management could also have a positive impact on in-calf rates.

We've identified 200 farms with wearables and asked farmers when they'd started using them. By using the Dairy Industry Good Animal Database (DIGAD) data to see who is and isn't using wearables, our study team will be able to compare 'like with like' users to highlight differences and collect information for future farmer discussions.





Accurate calving dates breed success

Correctly reporting calving dates is crucial as they influence every Breeding Value that makes up Breeding Worth. How is this data used, and what difference does it make?

Animal  Evaluation

Accurate calving data is not just a matter of record-keeping; it's a catalyst for better decision-making, improved breeding practices, and enhanced productivity in the New Zealand dairy sector and global markets.

Farmers' calving data feeds into the Dairy Industry Good Animal Database (DIGAD) and is used to calculate Breeding Worth (BW) and Breeding Values (BVs).

Did you know?

Five times more calves are recorded as born on August 1 than on August 2. Surprising, but that's what the DIGAD data reveals (see Figure 1 below).

Correctly reporting calving dates is crucial as they influence every BV that makes up BW. Getting it right empowers farmers to make informed breeding decisions.

Effects on parentage

Matching a calf to its potential sire relies on its dam's

calving and mating dates. When a calf is born, her BW is made up from half of the dam's and half of the sire's BW. If the calving date is incorrect, the wrong mating date might be selected, leading to the wrong sire being matched with the calf. This means the calf's BW is unlikely to be an accurate estimate of its genetics, especially if the assigned sire is of a different breed.

Effects on milk and fertility BVs

Calving dates are used to calculate the age of a cow when she calves. Heifers that are older at first calving will produce more milk, resume cycling and get in calf earlier than those that are younger.

This is not related to genetics, but the fact the heifer has had more time to grow and develop. When calculating BW, factoring in the age at calving ensures we're estimating the differences in performance due to genetics rather than the environment.

Additionally, a cow's milk production varies depending on the stage of lactation. Calving dates are used to calculate the days in milk at each herd test. Incorrect recording leads to wrong assumptions about the necessary adjustment, resulting in some cows appearing better or worse than they are.

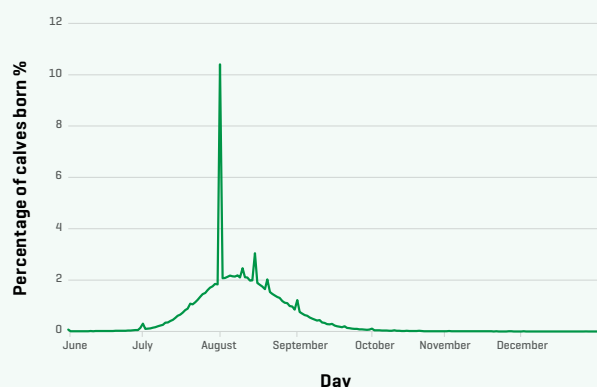
The encouraging news is the gap between the spike on August 1 and August 2 is shrinking every year. Farmers can keep track of on-farm information more easily with improvements and uptake of technology.

Want to make a difference in your breeding decisions? Check out dairynz.co.nz/parentage

Or, point your phone's camera at the QR code (right).



FIGURE 1. The percentage of calves born each day over the spring calving period (NZ).*



*Data sourced from all spring-born animals used in Animal Evaluation as at 09/02/2024.

Seasonal toolbox



Key DairyNZ tools and resources for farmers, designed with the latest research and technology.

To access a list of links to all the tools and resources featured on this page, point your phone's camera at the QR code above.

Spring Rotation Planner

Use this tool to ensure your pastures are strategically allocated post-calving for balanced grazing. Predict and manage average pasture cover (APC) decline to guarantee optimal feed supply until balance date. Keep tabs on grazing residuals to ensure your cows are well-fed. And track APC against targets to spot surplus or deficit periods.

dairynz.co.nz/spring



Setting up for calving

Spring calving is just around the corner! Planning and preparing for calving with your farm team will reduce stress and keep everyone safe and healthy. Get set up for success with tips on:

- crafting a solid team plan
- keeping well during busy times
- a pre-calving checklist
- calving kit essentials
- managing springer mobs.

dairynz.co.nz/calving-setup

Feeding newborn calves

Calves are born with no immunity, so to ensure they absorb antibodies and develop a strong immune system, it's important to feed high-quality colostrum right after birth. During the first three weeks of life, they rely solely on milk for nutrients and growth since they can't digest solid food yet. However, newborn calves can't consume enough volume in one feed per day to thrive. To ensure they get enough milk, feed them twice a day or ad-lib for two to four weeks. This allows young calves to digest adequate amounts of milk and nutrients for good health and growth.

dairynz.co.nz/feeding-calves



Caring for down cows

If you're unsure whether a down cow can bear her own weight, roll her instead of lifting to help her get back on her feet – it's quicker and safer for her. It's important to note which leg she's sitting on each time you check her. That's because sitting on the same side all day means one back leg will take all the pressure from her body weight, which leads to nerve and muscle damage. If she can't swap sides herself, regularly roll her onto her other side.

dairynz.co.nz/down-cows

1. Tuck the cow's legs in

The closer they are to her body, the better.



2. Roll the cow over

- Stay low, bend your knees and push from her hips.
- If possible, grab a teammate to help push from her shoulders.
- Don't do yourself an injury.



3. Pull the cow's back legs out

Each time you roll her, flex and extend her back legs afterwards to help with bloodflow.



4. Repeat two to four times daily



Giving calves the best start

Give your calves the best possible start and you'll set them up for a strong and healthy future. Learn all the best practices for caring for calves including:

- safe techniques for picking up calves
- tips for accurate recording to help with genetic gains
- simple steps for navel care
- important steps for the first few hours of life.

dairynz.co.nz/collecting-calves

Useful tools and resources for August and September

- *Spring Survival Guide* and *Feeding Cows in Spring FAQ Guide* – dairynz.co.nz/spring – see additional resources.
- Cow Reproduction and Mating Overview – dairynz.co.nz/mating
- Heat Detection Strategy – dairynz.co.nz/heat-detection-strategy

BCS loss in early lactation

For the first 6-8 weeks post-calving, it's natural for cows to dip into negative energy. They mobilise fat and muscle to meet the deficit. But aim to keep the loss to just 1 Body Condition Score (BCS) unit.

Come the start of mating, they should be back in a state of positive energy balance. If they're not there yet, feed extra pasture or supplements, especially to younger and thinner cows. You can cut down on energy demands like switching to a period of once-a-day (OAD) milking.

dairynz.co.nz/bcs-loss

NORTH + SOUTH ISLAND

Teaming up for top results

Dairy farmers across NZ are set to benefit through regional research, demonstration, monitor and partner farms sharing past research and identifying new ways to work together on projects.



Dawn Dalley

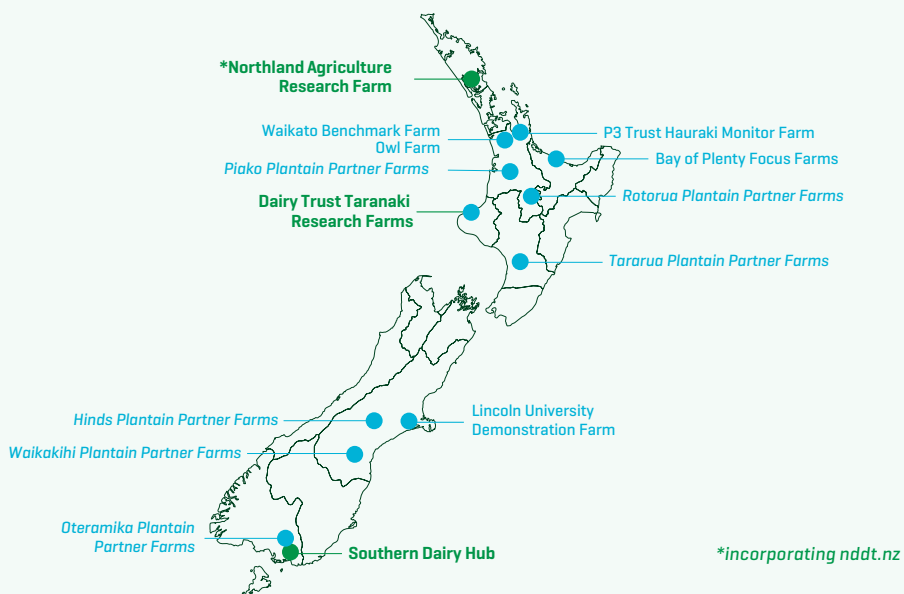
In March this year, DairyNZ senior science manager, Dawn Dalley, and representatives from the Southern Dairy Hub (SDH), Dairy Trust Taranaki (DTT), and Northland Dairy Development Trust (NDDT) met to get a better understanding of each other's businesses.

The project team also investigated opportunities to leverage research generated from smaller, regional research partners across the country (see map, right).

"We're looking for opportunities to team up with each other, to pool resources and increase everyone's ability to adapt and extend their research findings to benefit farmers in other regions," explains Dawn (see partner comments below).

FIGURE 1.

DairyNZ works with a variety of regional research, demonstration, monitor and partner farms across NZ.



Kim Robinson
nddt.nz



"It's useful learning how other research organisations are structured in terms of governance and project management, to identify efficiencies.

"It is also valuable being aware of how similar issues differ across regions, and what research is transferrable elsewhere – like projects looking at reducing nitrogen and emissions. That way we can build on each other's projects, rather than duplicating them. Standardising how we do the research helps validate everyone's work."

Jason Rolfe
dairytrusttaranaki.co.nz



"Northland research is looking at challenges we in Taranaki may face in the next decade or two, like climate change, managing Kikuyu and dealing with plant pests – so their work will save us repeating it.

"Collaborating also means DTT's nationally significant projects will reach a wider group of farmers across the country: we'll do that for other organisations as well.

"We also aim to share research using key points for farmers that they can read over in five minutes."

Andrea Dixon
southerndairyhub.co.nz



"While the challenges in other regions may be different, a lot of the principles are the same. In Southland, we've done a lot of work on wintering, and we know what we've learnt will be helpful elsewhere.

"By being joined up with other researchers across the country, we can also be more agile, helping farmers when there's a change at a regional level.

"Overall, I think researchers' increased collaboration will be of huge benefit to farmers."

Find out more about DairyNZ and its research partnerships at dairynz.co.nz/research



Co-design helps reduce sprains and strains

A three-year DairyNZ project has included working closely with farmers, QCONZ and other experts to co-design equipment to reduce sprains and strains on-farm. Here's what they came up with.

Dairy farming is a physical job. According to New Zealand's Accident Compensation Corporation (ACC) data, sprains and strains (overstretching or tearing of soft tissues in and around a person's joints) are common on dairy farms – but many are preventable.

In 2022 and 2023, there were about 1500 claims to ACC each year (totalling \$5-6 million and representing around 40% of dairy-related claims). Many of those injured take injury leave at the busiest time of the year.

To tackle this issue, a three-year Reducing Sprains and Strains project was launched in 2021, led by DairyNZ scientists in partnership with ACC, and co-funded by the ACC Workplace Injury Prevention Grants Programme. The project's aim was to have scientists work closely with farmers to develop solutions that would reduce on-farm injury risks over the busy calving period. Consultants QCONZ also provided their specific expertise, carried out over 50 farm visits, and worked with DairyNZ and commercial partners to make this project's first two products available for farmers to buy (see pages 28-29 for details).



Dr Callum Eastwood
Senior scientist
DairyNZ



Brian Dela Rue
Research engineer
DairyNZ



Chris Leach
Chief Executive Officer
QCONZ

This 'co-design' approach was rolled out in three stages:

1. Working with farmers to **define the issues** leading to on-farm sprains and strain injuries.
2. **Co-designing sprains and strains solutions** with farmers and other experts to reduce these injuries.
3. Developing and testing concepts, **prototyping with farmers**, testing them on-farm and refining them through farmer feedback, to create robust products suitable for farmers to buy.

Stage 1 – Define the issue

A detailed study of 50 dairy farms was carried out, followed by a wider phone survey of 119 farmers¹, who had experienced a sprain or strain injury during the spring calving season of 2021 (Table 1). We found out that most injuries (34%) happened in the paddock, from either slips, trips or falls, or from bending or twisting.

The next most common were calf-related injuries (24%), mostly from bending, twisting or lifting heavy objects like calves, buckets, or bags of meal. Milking caused 22% of injuries, mostly from slipping, tripping or falling (49%), but also by bending, twisting, and reaching actions (32%).

Most injuries were to the back (25%), often from calf-related activities. Ankle (15%), knee (13%) and shoulder injuries (12%) were the next most common.

This highlights risks around calf pickup and calf rearing. Particularly the in-paddock tasks of catching and lifting calves into a trailer, carrying buckets of milk, and lifting and moving calves around for feeding or between pens. In-paddock injuries weren't just associated with new-born calves, they also included a surprising number of slips and trips due to uneven and slippery ground.

Unsurprisingly, milking was a high-risk area², not just due to the repetitive twisting and reaching during the milking process, but also from slipping, tripping or falling on steps,

Summary of results from survey of 119 sprain or strain injuries among NZ farmers and employees in spring 2021, divided by farm task.*

TABLE 1.

Injury categories	Milking related	Calf related	Animal handling	Working in paddock	All injuries**
All injuries	22	24	17	34	96
• Body action when injured [% of farm task category]					
Slip, trip or fall	49	19	23	62	42
Bending, twisting, reaching	32	38	59	20	33
Lifting/carrying heavy object	3	27	9	9	12
Repetitive action/task	16	14	0	9	10
Not noted	0	3	9	0	2
• Injuries involving manual lifting [% of farm task category]					
	13	62	21	16	27
• Main body part injured [% of farm task category]					
Upper/lower back	19	47	10	21	25
Ankle	16	6	20	16	15
Knee	13	15	20	14	13
Shoulder	16	9	10	12	12
Hand/wrist	13	3	10	9	9

* Data shows the body action being undertaken when injury occurred; injuries where manual lifting was involved; and the main body part injured.

**Total number of injuries across these four categories.



1 in 5
of those injured
required more than
one week off work



hoses, uneven concrete and slippery surfaces³.

These injuries have a big impact on people and productivity. While 50% of injured farmers took no time off, 28% needed under one week off, and 21% needed more than one week. On average, farmers with injuries took 12 days off work, but took 26 days to feel fully recovered.

Stage 2 - Co-designing sprains and strains solutions

Three workshops used the injury data, farmer experiences and insights to develop ideas aimed at addressing the major risks. This 'co-design team' included farm owners, employees, health and safety experts, engineers, physios, ergonomics experts and dairy farm systems scientists.

The workshops used design thinking processes to put the end-user (farmers) at the centre of the innovation and come up with concept drawings around ideas. The aim was to eliminate risky tasks (where feasible) and/or to use engineering solutions to reduce risks around essential tasks.

Stage 3 – Prototyping with farmers

The workshop concepts were built into physical prototypes by the project's commercial product development partners, tested with farmers and



Some of the co-design team in action. (Photo: K Whall, Primary Purpose).

refined based on their feedback. Five of the major products emerging from the project are outlined overleaf, with one already available to farmers.

Benefits of the project

The project highlighted the impact that sprains and strains can have on farmers, and the data collected provided a focus on areas where improvements were needed. The simple prototypes created engaging discussions with farmers at various events such as Fieldays® and discussion groups.

Using a co-design approach, with farmer testing, feedback and refinement, the project has led to providing farmers with tangible current and future options to reduce injury on-farm.

For more information on this project, visit dairynz.co.nz/sprains-strains – and check out our cover story (pages 6-11) in this issue, to hear from farmers who've been involved in testing some of this project's prototypes.

Key Points

1. Sprains and strains are common on dairy farms, but many are preventable.
2. Better safety equals improved productivity, as many farmers with sprain or strain injuries took a long time to feel fully recovered.
3. Scientists worked with farmers and other experts on co-design and various prototypes were tested on-farm by farmers and refined using farmer feedback.
4. The Easy-Entry Calf Trailer Gate is now available nationwide – contact KEA Trailers **0800 869 532** and sales@keatrailers.co.nz
5. Registrations for purchasing the Easy-Access Calf Pen Gate are being taken now at am.gallagher.com/en-NZ/Support/Contact-Us

Funders and delivery partners

The project was made possible with \$900,000 from ACC's Workplace Injury Prevention Grants Programme and \$150,000 investment by dairy farmers through the DairyNZ Levy. The partners of this project include QCONZ, Healthy Lifestyle NZ, Pāmu, Farm Source, Kea Trailers, Gallagher, Wheelco, The Wholesale Matting Company and Scarlatti.

Five solutions for farm safety

Each of these prototypes was co-designed by DairyNZ's scientists, working alongside QCONZ, health and safety experts and farmers. They were also tested by farmers who provided feedback which helped refine the prototypes.



Easy-Entry Calf Trailer Gate

This spring-loaded, one-way self-closing saloon gate minimises the struggle of opening and closing the trailer gate while handling a wriggling calf or preventing escapees. Analysis by an ergonomics consultant rated this design better for posture than an existing calf trailer design.

DairyNZ worked with Kea trailers on this solution. It can now be purchased from them either with a new trailer, or as a standalone gate to retrofit to existing Kea trailers.

Cups-On Mat

Rotary platforms are at a fixed height, even though people milking vary in height. This sometimes leads to poor ergonomic cupping technique⁴. Shorter milkers often use a thin mat, but that provides limited height improvement or creates a trip hazard in itself.

Through the co-design workshops, a purpose-built 'cups-on' mat was proposed so this area can become much safer and comfortable for a wider range of people, increasing a person's height by up to 100mm.

The project team has worked with The Wholesale Matting Company to develop a prototype which was tested on farms in 2024.



Flexible Breast Rail

The risk to backs and shoulders during milking is higher when the milker doesn't have a good posture⁵. For example, if they're having to reach forward to cup cows that are standing forward in the bail (usually the case with heifers or in a mixed breed herd).

This design has an elasticated cord and protective cover positioned in front of the existing breast rail. This encourages smaller cows to stand further back in the bail, providing easier access for the milker to attach the cups. Cord flexibility allows larger cows to stretch the elastic and have sufficient space to stand comfortably and be milked.

A farm trial showed this design significantly reduced the distance between the rear of the cow and the rump rail.





Easy-Access Calf Pen Gate

This calf pen gate also features the saloon gate concept, allowing farmers to push calves through but still hold heavy buckets, bags, or calves at the same time. The auto-closing doors can be latched, so calves can't slip into other pens. The gate can also be easily retrofitted into existing calf-rearing sheds.

DairyNZ worked with Gallagher on this solution, and it will be available for purchase soon.



Easy-Lift Bucket Trolley

This pivoting trolley was designed to provide a safer and more efficient way to transport heavy buckets of milk or colostrum from the dairy to the calf-rearing shed. Buckets can slide onto the milk trolley platform without lifting, and remain upright when being moved, to prevent spills.

While many farms use piped milk systems, or transfer milk via trailers, this trolley offers a simple and cost-effective option for smaller farms. The project team has worked with WheelCo to create a final saleable product.

- The Easy-Entry Calf Trailer Gate is available to buy now from KEA Trailers **0800 869 532** and **sales@keatrailers.co.nz**
- Registrations to purchase the Easy-Access Calf Pen Gate being taken now at **am.gallagher.com/en-NZ/Support/Contact-Us**

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