Inside Dairy

Your levy in action

Changing guard

Farming through three generations





Over the fence...

Making the most of what we've got is very relatable for most of us right now. It's tough economically on the farm and off, so valuing our sector's people and resources has never been more important.

DairyNZ will continue to focus on its tight times business programme in the New Year. Achieving the best results your bottom line requires balancing team, family and animal care needs, alongside pasture performance, environmental targets, and profitability.

Talk to our regional team about solutions, ideas and opportunities to manage that delicate balance. In this issue of *Inside Dairy* you'll also see how other farmers are working smarter and saving costs.

While I'm only two months into my new role at DairyNZ, I've been impressed by the depth of commitment farmers have toward the sector and its future. As an industry-good body, we also have a unique opportunity to re-focus our efforts across most dairy-related topics and issues, without spreading ourselves too thinly.

Right now, we have an opportunity with the new Government to ensure our farmers' voices are well represented in relation to the key issues they're facing, so future policies are clear, pragmatic and fair. It's a big and hugely important goal, so we're doubling down and implementing our own '100-day plan', to proactively engage with key ministries on your behalf.

In 2024, I'll be looking closely at where DairyNZ can deliver the most value to our farmers, re-prioritising how we can best invest your levy to secure our sector's future.

In the meantime, I wish you all a very Merry Christmas and a happy New Year. I'm excited about what 2024 may bring, and connecting with as many farmers as possible. I also hope your festive break is a relaxing one with safe travels.

I'd love to hear your feedback or views on DairyNZ and its work, too – drop me an email any time at campbell.parker@ceo.dairynz.co.nz

Nga mihi,

Campbell Parker
DairyNZ chief executive

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On the cover:

Mike, Afra and Edward Roskam reflect on their farming family's journey.



Prefer to read Inside Dairy online?

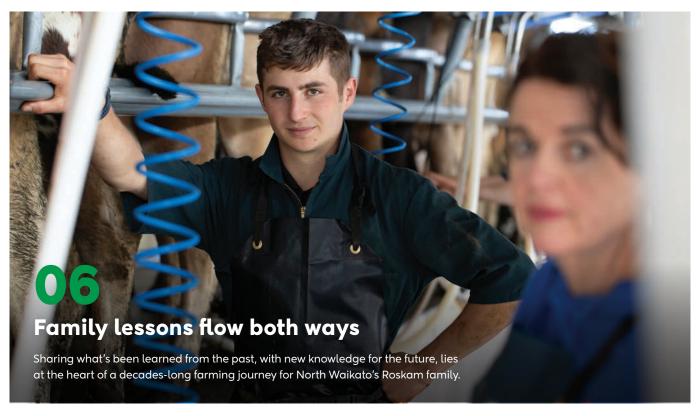
Go to dairynz.co.nz/insidedairy to opt out of the print version and sign up for an email notification when each issue goes live online.

ISSN 1179-4909

DNZ03-236

Inside Dairy is the official magazine of DairyNZ Ltd. It is circulated among all New Zealand dairy farmers, and sector organisations and professionals.

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25 The answer's in the (e)DNA

Farmers are working with DairyNZ to trial a new low-cost, easier, and more holistic way of assessing stream health through 'Environmental DNA'.



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



A biosecurity 'star rating' system proposed by dairy farmers is now being piloted in Mid Canterbury.

In 2022, a group of Ashburton farmers put forward a solution – the Health Monitoring and Biosecurity Star Rating – to address on-farm biosecurity pain points. The scheme would reward farmers for good management practices and give assurance of stock health and biosecurity-related information.

As a result, the Star Rating project is now being piloted with Mid Canterbury dairy and beef farmers, in partnership with Synlait and NZ Farm Assurance

Incorporated farm assurance programmes.
The Star Rating system leverages the information already provided by farmers to these programmes.



Led by DairyNZ with support from Beef + Lamb New Zealand and MPI, the pilot will run until late 2024 to see if it can be rolled out across New Zealand. Visit healthmonitoringandbiosecurity.co.nz

People Expo Back in 2024

After stellar ratings from farmers earlier this year, People Expos are returning in 2024.

These free events, run in partnership by DairyNZ and Dairy Women's Network, are designed to help business leaders and employers tackle the big issues around employing and keeping people on-farm.

Highly credible thought leaders will inspire you with new ideas for how to take control, both on-farm and in the community.

Northland, Lower North Island, Canterbury and Southland – we will see you in March 2024!

Keep an eye on **dairynz.co.nz** or **dwn.co.nz** for event details.





Setting up for autumn calving

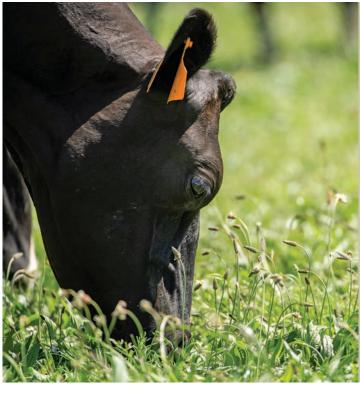
Calving is one of the busiest times of the year. Planning and preparing with your team now will help reduce stress when calving is in full swing and keep everyone safe and healthy. And with the unpredictability of NIWA's forecasted El Nino dry summer, autumn calvers should also be thinking about whether there is enough bulk feed for dry cows. For helpful advice on setting up for a successful autumn calving season visit dairynz.co.nz/calving-setup

Summer management webinar series

NIWA's prediction of an El Nino weather pattern means its highly likely this summer will be drier than usual. We're helping farmers prepare for the months ahead with a summer management webinar series. Tune in to hear from a variety of guest speakers including experienced farmers and DairyNZ scientists. For more details, or to catch up on the first webinar recording which discusses variable milking as a tool to manage dry conditions, visit

dairynz.co.nz/summer-management





Do you have a facial eczema plan?

Studies have shown facial eczema can cost more than \$100,000 a year in lost milk production. Because the signs can be hard to spot, taking a proactive approach is critical.

Monitor regional spore counts and if there are spikes, complete your own pasture spore count monitoring. Discuss your treatment plan with your vet, and order early if necessary to avoid any supply shortages.

Get more information at dairynz.co.nz/facial-eczema



Spotlight on DairyNZ's new CE

In October, our new chief executive Campbell Parker joined DairyNZ. *Inside Dairy* sat down with him for a quick Q & A.

Q What drew you to DairyNZ?

A The dairy sector is vital to the success of New Zealand, and I passionately believe that it has a positive future. The opportunity to lead DairyNZ at a pivotal time for our sector excites and energises me to deliver value for our farmers. I believe I have the commercial and leadership experience to make a positive difference.

Q What do you see as the biggest priorities ahead for dairy?

A Ensuring a sustainable future for the dairy sector. We do have some challenges in front of us, but we also have opportunities. We need to work together to ensure we continue to innovate and remain globally competitive.

Q What is the best thing DairyNZ can do for farmers?

A Stay focused on the 'big rocks' that will have the most impact. We must have a relentless commitment to delivering value for our 11,000 dairy farmers and have their backs on the big issues facing the sector now, and in the future.

Q What's surprised you the most, since joining DairyNZ?

A The breadth and depth of the work across the business. The work DairyNZ does today is very different to 10 years ago. There is a lot on the go, and I believe there is an opportunity to review the priorities to make sure we are externally focused and delivering for our farmers.

Q What keeps you busy, outside work?

A Family and friends are big for me; I've been married to Nicky for 20 years and we have three teenage boys, so life is busy. I love the outdoors, we have a bach at Kinloch and I also enjoy playing golf, fishing and mountain biking.

About Campbell

Campbell Parker joins DairyNZ and brings with him 25 years' worth of leadership experience in agriculture, including PGG Wrightson, Bank of New Zealand and GEA Farm Technologies. He's from a farming background and is passionate about dairy.

Community care by the book

When dairy farmer Rachel Numan started writing *Tractor Dave* children's books for her sons, it soon turned into a positive initiative giving back to Kiwi communities nationwide.

Rachel made the move to farming after seven years as a vet in Te Awamutu, where she worked mainly with dairy cows. Her book series, *Tractor Dave*, features a colourful character having adventures on a New Zealand dairy farm. A portion of the proceeds from the books go to charity.

Community at heart

Rachel is also involved in a wide range of local community and environmental initiatives in Pokuru (near Te Awamutu), where she farms with husband Chris.

"I love working with family, neighbours and community groups – we achieve so much more working together," says Rachel.

For every copy of the first *Tractor Dave* book sold, Rachel donates 50 cents to the charity, Meat the Need, founded by dairy farmers Siobhan O'Malley and Wayne Langford. The charity supplies meat and milk donated by Kiwi farmers to food banks and community organisations nationwide.



Left: Rachel's Tractor Dave book series raises funds for charity and community initiatives.

Below: Rachel volunteers her time to control pests on Mt Kakepuku to help native birds thrive.





"It's great contributing to a positive initiative that's making a real difference in people's lives," says Rachel.

To top it off, she also helps run the Pirongia Playcentre and attends playcentre sessions eight hours a week.

Environment in focus

For every copy sold of book two in the *Tractor Dave* series (*Digger Disaster*), a native tree is planted on the Numans' farm, as part of protecting waterways and enhancing native bird and insect biodiversity.

The Numans also receive trees from Trees that Count, which matches seedlings gifted by Kiwis to planting projects nationwide. Plus, they pay Pirongia Te Aroaro o Kahu Restoration Society to plant a thousand trees on their farm every year.

Rachel volunteers with the Kakepuku Mountain Conservation Society too, to re-stock pest bait-lines on the mountain several times a year. This helps protect native birds on Mt Kakepuku, including tūī, kererū and North Island robins.

Looking forward

Rachel and Chris call their sons Jack (6) and Oscar (4) tiny farmers, so have their eyes firmly fixed on progressing a positive future for dairy farming and New Zealand.

"All Kiwis want their children to grow up in a healthy environment and supportive communities," says Rachel, who adds it's great to get out and develop strong community connections and connect farmers with each other too. "I find the more I give, the more I get back."

Special thanks to those who helped with this story, Rachel and Chris Numan, sons Jack and Oscar, Nicola van Dorsten, Peter Morgan and Ann Bouma.

Read more at

dairynz.co.nz/news/heart-of-the-community

Family lessons flow both ways





When Afra and Peter Roskam moved to New Zealand from Holland after World War II, they had little idea what a dairying legacy they would create on the far side of the world.

Today, that legacy endures, with next-generation family members taking up the dairying reins and applying lessons from generations before – while passing on a few of their own in the process.

Representing this new generation is Afra's grandson, Edward Roskam, now farming with mum Angela and dad Mike on their 220-cow farm at the base of the Kaimai ranges, near Matamata.

Edward has been back since June 2023, returning from his 2iC role on a Roto-o-Rangi farm, before Mike underwent two major knee operations in August and September.

As the family brace for a tough payout year, they're finding some habits embedded in their DNA are helping them handle a tight budget this season, to get the most they can from their cheapest feed source: pasture. Meanwhile, both generations are learning new tricks and approaches from each other to get through a tougher time.

"I think Dad's provided me with a good work ethic," says Edward. "But I've also learned a lot about getting things done yourself. Being able to fix and repair things around the farm, whether it's a fence or machinery. Things that on many farms, the owner may just get a contractor or mechanic in to do."

He adds that with contracted labour tipping over the \$100-an-hour mark, anything that can be done on-farm is a welcome saving.

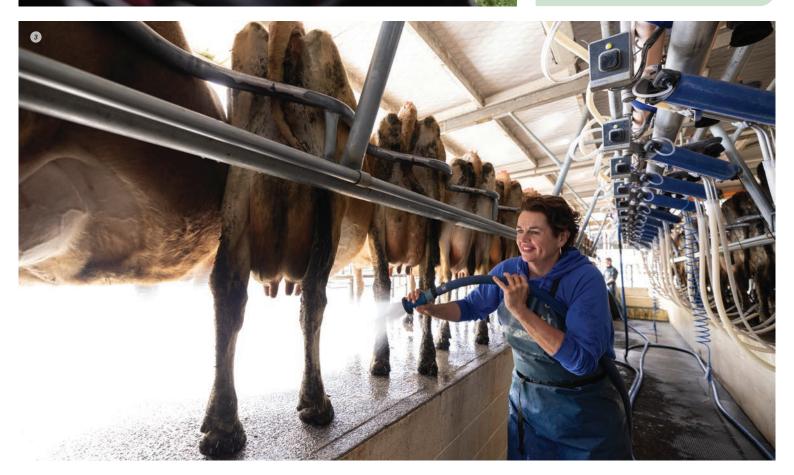
"And you also learn to do something once and do it right."

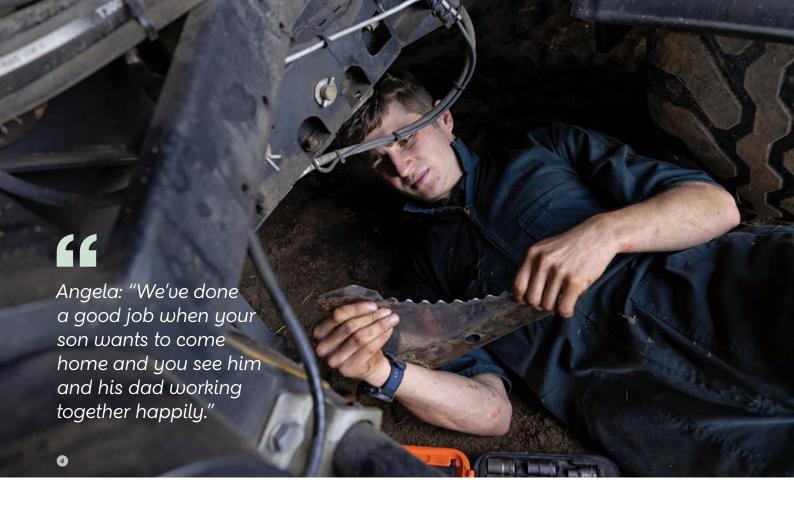
Those practical learnings have played out well for Edward, who also claimed the DairyNZ Practical Skills Award in the 2022 New Zealand Dairy Industry Awards (NZDIA).





- Looking across the Roskams'
 Matamata farm towards the
 Kaimai Ranges.
- Dad Mike appreciates Edward bringing in new techniques and technology to apply on-farm.
- 3. Also a relieving primary school teacher, Angela's passed on the value of good communication to son Edward.
- 4. Edward gets stuck into baler maintenance.





Edward's also learning the value of shopping around for quotes on all the farm's big-ticket items, like fertiliser spend, where he managed to shave \$20/tonne off a recent 200-tonne lime order.

Making that kind of deal relies on good vendor/buyer relationships, according to Edward's mother Angela. "We take the approach that loyalty is a two-way street, that we'll be loyal customers, but for that we do look for some recognition in what we are charged."

The learning is mutual

Angela and husband Mike are finding that the learnings from having Edward home on the farm are not all one-way, either.

They've come to appreciate the tunedin, internet-savvy approach younger farmers take when learning about new techniques and tech to apply on the farm.

"We've learned about foliar spraying, and how this could be a good alternative to fertilising the usual way, which in the past has caused us some problems with potash and potassium build-up in the soil," says Mike. He's looking forward to seeing the results from the first year of liquid fertiliser application using Edward's 'a little and often' approach on the farm. Edward intends to monitor paddock response to see if it makes a material difference to grass productivity over the coming seasons.

Angela says the three of them also share ideas at breakfast too.

"We'll catch Weather Watch and maybe some YouTube videos on farming ideas and techniques. It's a good way to share what's going on and pick up a few new ideas."

Mike says he's someone who carries "everything around in my head". Even though Mike doesn't have a cellphone, Edward's adoption of phone-based apps for jobs like dry matter recording and fertiliser application are surprisingly welcomed by his dad.

Edward's also learned the value of good communication. That's something he attributes to Angela's preparedness to listen and understand. Those skills, developed during her time as a primary school teacher, are equally valuable in the farm business.

Farm facts

Mike, Angela and Edward Roskam

ROLE

Farmers/owners

LOCATION

(This farm) Matamata, Waikato

FARM SIZE

65ha (effective) and 44ha runoff

HERD

220 Jersey cows

"We are very much into having open and honest conversations here, it wouldn't work if we didn't," says Angela. "It's not easy for someone like Mike to hand over much of the running of the farm and you have to have good lines of communication between everyone for that to be successful."

Her desire to also continue learning and improving has led Angela to complete a Diploma in Primary Industry Business Management and a Certificate in Animal Wellbeing (Dairy). That's set a good example to Edward, who is completing his New Zealand Certificate in Agriculture (Level 4).

Full circle, always improving

"We've chosen this lifestyle and this business, and to make it work for two households on a smaller-sized farm, we need to keep moving things forward," says Angela.

"You can't change a poor payout figure, so it comes down to continually improving what you do, all pitching in together – like we did when Mike had his operation – and working hard."

Edward says Angela's influence means he's better at looking at the bigger picture. He's also learned to write things down and mark them off as he goes.

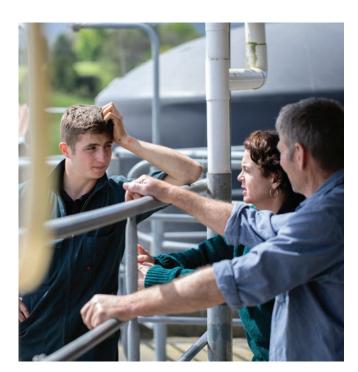
"It means I'm getting better at completing one task before I move to the next."

True to his hard-working Dutch roots, Edward says he's also learned to be humble about success.

And he's discovered the value of giving back. He's putting in plenty of voluntary hours to help with the NZDIA's ongoing award rounds, recognising that the industry will continue to deliver benefits to him in years to come.

For Angela, the best lesson has been to see her son return to the farm under his own free will.

"I figure we've done a good job when your son wants to come home and you see him and his dad working together happily."



Angela and Mike Roskam (at the shed with son Edward): both generations are learning from each other.



Afra Roskam and her late husband Peter (1997).

Long journey leads to success

With 17 children, 80 grandchildren, 165 great grandkids and eight great-greats, 92-year-old matriarch Afra Roskam jokingly notes there wouldn't be many people in Waikato who doesn't know a Roskam – or is married to one.

She continues to live on the original family farm at Netherton. Over the years, Afra and her late husband, Peter, juggled family life while building up a portfolio of nine dairy farms, some of which continue to be run and owned by family members today.

Although those tough early days of carting hay with a sledge and horse, cleaning out around pigs, and milking 60 cows by hand in a walkthrough cow shed are a distant memory now, Afra and Peter's principles still burn brightly in the next generation. "It is what Michael is doing, and teaching Edward to do, looking after your cows," explains Afra. "In the early days we had so few that we had names for them all, but if you look after them, they will look after you."

The other simple principle, she says, is to focus on growing good quality grass and making the most of what will always be the cheapest feed source.

"Be sure to leave it three years after sowing before you make silage. By letting it grow deeper and stronger you will see it last longer."

Afra also has some good advice for farming families who choose to work together.

"I think you have to remember the value of having a good laugh. Things will always happen to you and you really just have to learn to laugh about them."



Small changes, big difference

Inside Dairy talks to two farmers about what they learned from DairyNZ's Workplace Productivity workshops earlier this year and what changes they've made to get the most out of their workdays.

Ashburton variable-order sharemilkers Shannon Hydes and Alysha MacFarlane, and Reporoa farm manager Jesse Craig, have discovered that improving workplace productivity on-farm doesn't have to rely only on major (or costly) adjustments.

Shannon and Alysha are milking 800 cows on 400ha (250ha effective) with an adjacent runoff. It's their second season on the property. They're milking TAD (twice a day) using an 8:16-hour milking interval.

"Before we did the workshops, we were looking for the 'big' improvements," says Shannon. "Now, we've found out that maybe it's just lots of small things that need improving to build up to the big-time savings, overall."

The Workplace Productivity workshops involved teams from 5-6 farms, with farmers working together to assess

their workplace practices and identify ways to save time and improve productivity.

Jesse, who also attended a workshop, has been managing 920 cows on 400ha between Taupō and Reporoa on Ajax Farm for just over two years. He's been with Pāmu Farms since 2014, however this year, he's nearly completed transitioning Ajax Farm from a 50:50 split farm into full autumn calving.

Since attending the workshop, he and his team made changes to their milking shed setup and processes, improved staff training and task-sharing, and ramped up weekly repairs and maintenance checks on equipment.

Teaming up, boots and all

A priority for all three farmers is ensuring their teams are at the centre

of planning, training and decision-making.

"That's probably given us the biggest change and improved productivity while building morale," says Shannon. "We now ask, 'what does good look like?'. Our team also has the confidence now to make decisions or to create a discussion around something – plus we've improved team culture."

Meanwhile, Jesse – who's been farming for almost 15 years and is now coming into his third year as a manager – says his fairly new team is going "amazingly". Targeting their strengths and interests, especially, is saving time on-farm.

"One or two of them had never been on a dairy farm before, and they've improved a lot recently. I make sure I sit down with them one-on-one so they can tell me what they enjoy most,

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I've literally spent next to nothing and saved time.

Jesse, his team and their grazing board. They also have daily 'tailgate' meetings (quick chats outside the office, in the dairy shed or in the middle of a paddock).

(Left to right: Nino, 3iC; Aubrey, dairy assistant; Jesse; and Maria, 2iC. Absent: Tristan, dairy assistant.)





and we then focus on that, so their interest is maintained in the job. I also run a three-monthly checklist with each of them."

They use a 'grazing board' to set out everyone's duties around each activity and, like Shannon and Alysha, Jesse rotates his team's tasks and start times every day.

"You might milk twice, maybe three times in a row, then you get sent outside and do those other jobs for the next day or so. We also rotate sleep-ins so everyone gets a turn. Everyone also gains a range of skills, whether it's milking cows or setting up effluent spraying."

No need to ask

Alysha says the creation of a Mondayto-Friday job board anchors their new approach.

"We all became far more organised, expectations were really visual and obvious, everybody was taking turns on jobs throughout the week, so it was all inclusive. Also, people don't need to keep asking us or our 2iC all the time about what to do next."

"We also talk about those Mondayto-Friday jobs at breakfast and get
straight into them after milking.
Monday might be cleaning the tractor
or cleaning the vehicles, Tuesdays
might be a bigger tidy-up in the
cowshed. It's given our team more
autonomy, improved their mood and
job satisfaction, and made things
more efficient."

Tangibles on tap

Even though Jesse and his team were going through autumn calving, they still managed to keep everyone's hours on farm within acceptable levels, based on what they learned from the '85-hour' project that five Pāmu teams signed up to. The 85-hour approach aims to get each person's hours on farm down to 85 hours per fortnight.

Milking-wise, Jesse also made setup and process changes which he learned through a follow-up on-farm session.

"We had a D-gate that was in the 'lock' position, and we just needed to cut that and attach a spring, so that cows could move the gate and get into their bail even before we started milking

"We also set the platform speed to specific speeds in the morning and afternoon, and that saved us time and cows weren't being over-milked as well. We're now milking on a MaxT approach, which is saving us about 30-40 minutes in the shed for each milking."

Overall, Jesse says that thanks to what he and his team learned at the workshops and pooling their ideas afterwards, he's "literally spent next to nothing and saved time".

Read more about workplace productivity at dairynz.co.nz/wps

Saving while the grass grows

Over summer, Waikato farmers Andrew and Christiane Myers use deferred grazing to improve profitability and feed cows during feed-deficits – making a big difference to their bottom line.

The Myers operate an equity partnership with their family on a 600-cow 190ha peat soil farm near Cambridge. It's their third season using deferred grazing on the farm.

"We've been farming here about 15 years now," says Andrew.
"Our drivers are to create a highly profitable system, one
that's simple and sustainable. We also aim to use deferred
grazing every season, not just in reaction to a drought."

Deferred grazing provides flexibility too, explains Andrew, as the grass can be grazed as needed, and excess grass can be harvested/stored.

"Also, if you've got extremely dry weather and you've got some cows dried off, you can use them to graze it."

The Myers set aside 5-10% of their paddocks annually for deferral, choosing paddocks near races or in central areas of the farm, with pasture scores which support the natural re-grassing process. Christiane says the ryegrass that thrives in their soils has done so over many years on this farm.

"This natural selection drives genetic improvement, with plants becoming more resilient to conditions here. No tillage also keeps more moisture in our soils."



Andrew's farm manager Aileen Bayquin checks a paddock using a plate meter.



Andrew works out that traditional re-grassing costs \$1000/ ha (including all machinery, spray and seed costs), so with deferred grazing, "we get our re-grassing as an added kicker for free".

The Myers also save on feed and silage costs, avoiding wastages related to storing and feeding out silage. Plus they save on bulk silage harvesting costs, which Andrew says can be around \$500/ha/year "and 50% more than that for baleage".

"Deferred grazing's also immune to inflationary increases and it doesn't incur the increasing labour, machinery, fuel and emissions costs of other processes."

The Myers' cows like it as well. While the nutritional quality of the deferred feed (metabolisable energy) is lower, the cows are more content, especially when it's hot and dry, says

"That goes a long way to having happy cows – and happy people too."

Find out more at dairynz.co.nz/deferred-grazing

Other benefits of deferred grazing

- No upfront processing costs (compared with cropping/silage harvesting), and less need to buy in feed.
- No need for infrastructure like feed pads, feed-out wagons and tractors.
- An empowered farm team with more control over feed grown on-farm, independent of contractors' timings.
- People spend less time feeding out: and it's a simple system suitable for all skill levels.



Congratulations Dairy Women's Network: for 25 years.

We're proud to have been working with Dairy Women's Network (DWN) from the beginning, to help them empower women in our sector to achieve great things!

Congratulations to DWN for achieving this amazing milestone.

When it comes to progressing a positive future for New Zealand dairy farming, we are stronger together.

That's why at DairyNZ, we're partnering and collaborating with organisations like DWN every day, to make the most of our sector's expertise, connections, and strengths.

That's how we expand our knowledge and better meet the needs of New Zealand dairy farmers.





To learn more about DWN and how to get involved in your region, visit dwn.co.nz

Caring for cows in transit

Transport can be stressful for livestock. How can farmers and others along the way make sure cows are comfortable during transport and at their destination?

With good preparation on-farm, and everyone in the supply chain playing their part, we can ensure cattle arrive at their destination fit and healthy. We've put together some tips on key steps and talked to the people who handle each stage of the journey. You can also get further useful information at dairynz.co.nz/transport

days before transport

Select cull cows

Ask your vet about how best to prepare your animals, based on your herd's health and productivity. Check if you need a transport certificate for any cows you have concerns about. "Ask to send your cows to a nearby meat processor to minimise transport distance. If space is tight, and the distance is longer than normal, keep older or lighter cows back."

- Kylie, veterinarian at MVP Vets





hours before transport



Lactating cows have a higher risk of metabolic issues during transport. They need roughage, extra calcium, and constant access to water until the time of loading. Take them off lush pasture for 4-6 hours before the trip to reduce effluent. Always doublecheck their destination on the day.

Prepare cows for transport

"The cows that are leaving are kept in a small, grazed out paddock with ad-lib hay, so they can lie down and rest. Shortly before the truck arrives, I put them on the yard with a cutdown 200L drum. It's easy to fill with the pressure hose and the cows have access to water until they are loaded."

– Ann, Waikato farmer



On the truck

Transporters look after cows by loading them calmly into certified crates and driving to the conditions. Farmers need to maintain the loading facilities so they're safe for both people and animals to use, and they should also clearly mark and yard special animals separately.

"Let our dispatch team know if there will be tall animals or cows with vet certificates, so the driver knows to keep the larger pen free or to plan a short route for the certified cow."

- Bruce, Operations Manager at **Road Transport Logistics**



At the meat processing plant

Once your cows arrive at the processing plant, they'll be held in the yards until needed. The wait time can vary, so prepare your cows for waiting beyond the truck journey. Farmers/transporters need to let processors know if a vulnerable animal is coming in. This way, they can adjust the schedule to minimise the cow's wait time in the yards.





Fast action, fast cure

A new study by vets Winston Mason and Mitch Cooper has unlocked the potential for NZ farmers to achieve the fastest recovery rates for lame cows worldwide, as Mitch explains.

While preventing lameness in cows is a top priority, quickly identifying and treating the condition is crucial, if cows are to recover quickly. A previous case of lameness is also the single biggest risk factor for a case of claw-horn lameness (white line and sole injuries), so the faster a cow recovers, the less likely she'll be to become lame again in the future.

In the study, farmers on five Waikato dairy farms identified a total of 241 cows with claw-horn lameness, which were then examined and treated by veterinarian Mitch Cooper once or twice-weekly. The animals were lameness-scored on average every four days, until they were completely sound.

One of the treatment goals was to apply wooden blocks to as many lame animals as possible, with 85% of the enrolled lame cows receiving them.

"There needed to be a reason NOT to place a block," explains Mitch, "rather than what normally happens, which is looking for a reason TO place a block."

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Our research has yielded the fastest cure rates ever reported in a peer-reviewed study.



It took on average seven days for the animals to become non-lame and 18 days to become completely sound.

Antibiotics were not required for 98% of the cows that had white line or sole lesions. The average 'soundness' cure time ranged between farms from 11 to 21 days.

"Our research has yielded the fastest cure rates ever reported in a peer-reviewed study," says Mitch. "That's good news for our farmers.

"By identifying and treating animals quickly and appropriately, using blocks as much as possible, managing the cows close to the shed, providing pain relief, and feeding them well, NZ cows can have the fastest lameness recovery rates of any dairy system worldwide."

Otorohanga dairy farmer Craig Mora says the study had tangible benefits for his teams and his cows, with "phenomenal" recovery rates.

"The targeted use of pain relief also led to us achieving a double-digit improvement in our recovered cows' reproductive levels – which is pretty amazing."

Mitch Cooper says recording of lame and recovered cows once a week is enough.

"Those lame for more than 14 days should be re-examined, and if those kinds of lameness periods are occurring regularly, farmers should get more advice on managing the situation."

Read the full study online free at **tandfonline.com** (keyword: lameness).

Visit dairynz.co.nz/lameness for tools and resources like our Healthy Hoof app and Lameness Cost Calculator.

Snapped!

Calf Club edition



Cutest Calf photo contest

DairyNZ's website for kids, Rosie's World, received 200 photo entries in the Cutest Calf Photo contest held last month.

The competition recognised and celebrated rural children caring for their calves ahead of Ag Days in October and November, and shared stories and photos with Rosie's urban audience.

Congratulations to Brodie Mitchell who won the contest, receiving the most votes for his adorable photo entry with calf Stella.

View the photos at rosiesworld.co.nz/photocontest





Brodie and Stella (Reporoa)

Natalie and Marshmellow (Morrinsville)

Miya with Flower (Stratford)

Joe and Lucy Goosey (Te Kowhai)









Keilyn and Whetu (Nukuhou)

Myra and Honey (Te Pahu)

Does OAD double milk SCC?

DairyNZ senior scientist Jane Lacy-Hulbert investigates whether switching from twice-a-day (TAD) to once-a-day (OAD) milking affects somatic cell counts (SCC) and the number of mastitis cases.



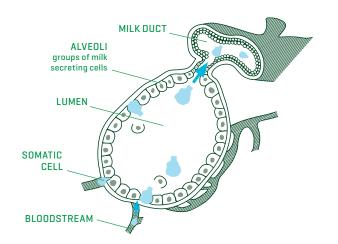
To answer these questions, we need to understand how somatic cells get into milk. Somatic cells are a natural component of milk. They play a crucial role in the cow's immune system, helping to protect the udder from infection. Alongside these, there are different types of immune cells, as well as some epithelial cells (those on the inner and outer surfaces of a cow's skin and organs) that are shed into milk all the time.

These cells move through the lining of the mammary gland, through channels known as 'tight junctions' connecting the epithelial cells (see diagram, below). This process stops milk from leaking back into underlying tissues and reaching the bloodstream.

"

...the impact at a herd level will depend on the current situation.

When bacteria are detected in milk, large numbers of immune cells flood into the milk, and SCC rises sharply as the inflammation opens the tight junctions. Once the infection has been cleared up, the inflammation subsides, and the junctions tighten again.



When a somatic cell infiltrates the lumen, it pushes out a milk secretion cell, making the alvioli less productive.

How does TAD to OAD impact SCC?

A less dramatic version of this inflammation happens when we switch a cow from TAD to OAD milking. But this change is usually mild and temporary, lasting 1-2 days – so long as there are no bacteria present, the junctions tighten up again over the next few days.

So, the answer to whether switching to OAD milking doubles milk SCC is yes and no: SCC at the cow level may increase (and possibly double), but the impact at a herd level will depend on the current situation. For herds where the SCC is under control (i.e., <150,000 bulk SCC and no clinical cows in herd) with good systems operating to detect clinical mastitis, then the SCC will only lift slightly, say by 50,000 cells/mL. So, getting the SCC under control before switching to OAD is the key.

How does TAD to OAD impact mastitis?

The chance of an increase in mastitis cases depends on the balance between two competing factors:

- Less frequent milking means fewer chances for bacteria to enter open teats, since the teats are connected less often to the milking machine.
- 2. However, milk is held in the udder for longer between milkings, giving more time for bacteria to grow.

This makes good milking practices and machine function even more important.

Learn more at dairynz.co.nz/mastitis

Myth

Switching cows from TAD to OAD doubles milk SCC.

BUSTED

SCC does rise slightly (and the risk of mastitis may increase if bacteria are present) – but the SCC is <u>unlikely</u> to 'double'.

Core skills for contract milking

Going into contract milking or looking to partner with one? Set up for success with skills, experience and reward, explains DairyNZ's Jane Muir, lead adviser – people.

Following a thorough due diligence process is key to establishing a successful contract milking relationship for both parties. It's something we talk about regularly in the dairy sector. What we talk about less often is the importance of ensuring a new contract milker has the necessary skills and experience in running a farm.

Skills and experience

Farm management experience is crucial for people going into contract milking. That's because, as a farm manager, you should be responsible for meeting farm goals in terms of production, stock, feed, environment, machinery and people management.

Farm managers also monitor, analyse, interpret and report appropriate benchmarks. They ensure farm policies and plans are implemented, they're responsible for meeting the farm budget, and they're accountable for farm expenses.

Farm owner David Jensen and his former BOP contract milker Reece Cox enjoyed a great working relationship. Without these essential skills, a contract milker is likely to fail or at least need support.

Holding the title of farm manager doesn't mean someone's gained the skills and experience that aligns with this title. Sometimes an employer will give an employee the title as a perk or incentive to stay on-farm, often as a sign of appreciation. That's understandable but it's then tricky for other farm owner/employers to review CVs. How do you know if the person has truly performed all the tasks of a farm manager well?

If you're looking for a contract milker, we strongly recommend you review potential candidates' skills and experience against DairyNZ's job description for a farm manager (see sidebar). If you see gaps, consider if and how you can accommodate them.

Rewarding risk

Farm managers and contract milkers have similar jobs – the



major difference is their ultimate accountability. Contract milking is business ownership, which comes with more risks than being an employee and, therefore, must offer greater rewards.

Farm owners' motivation to put a contract milker onto the farm, rather than employ a team, should never be financial. Rather, it should be about gaining the ability to step back from day-to-day management.

It's also worth farmers thinking of stepping into contract milking to find out what competitive farm manager salaries are, to understand what they could earn with lower risk.

Useful tools and resources



Farm job description templates

dairynz.co.nz/roles



Contract milking Course by Dairy Training Limited (DTL) dairytraining.co.nz



Contract milking calculator dairynz.co.nz/contract-milking-calculator



Contract milking three-part series (episodes 37, 39, 40)

dairynz.co.nz/ podcast



Seasonal toolbox

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

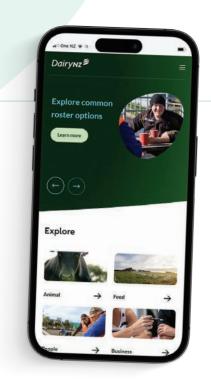
DairyNZ's updated website

Here's where you can find the online information, tools and resources that are relevant for what's happening on-farm in December and January.

Did you know that the **entire website** has been refreshed recently? That's because farmers told us how important it is for them to have a modern, easy-to-use website. So, we're making it easier for you to find everything you need to help support your on-farm decision-making across the seasons.

We hope you like the website's new look and functionality – check it out today!

dairynz.co.nz



Heifer liveweight targets

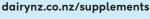
Heifer liveweight at first mating and calving affects reproductive performance and milk production potential. Achieving liveweight targets is crucial; otherwise, first calving may be delayed, and fertility may decrease. Well-grown heifers will produce more milk in the first lactation, compete better with mature cows, and survive longer in the herd. Through this web resource, you'll find details on setting heifer liveweight and weight-for-age targets, choosing estimation methods, monitoring cow performance and more.

dairynz.co.nz/lw-targets



Supplements overview

Heading into a potential summer dry, act early to reduce feed demand and carefully choose supplements based on energy content, cost, storage, wastage, and feeding logistics. Evaluate the cost of any supplementary feed bought in against the cost of alternative options to meet animal demand, e.g., nitrogen use. Use the Supplement Price Calculator to help with feed budgeting. The supplements overview webpage details common supplements, including energy levels (MJ ME/kg DM), nitrogen content, wastage and key feeding considerations, with guidelines for safely introducing supplements like potatoes, meal and molasses into your herd's diet.







Flexible milking strategies

Flexible milking can take on different forms from once-a-day (OAD), three times in two days (3-in-2) and ten milkings in seven days (10-in-7). Explore the different strategies and insights from our pilot study to see if – or when – flexible milking could benefit your farm.

dairynz.co.nz/flexible-milking



Farm business management tactics

Managing a viable farm business in the current economic environment is a challenge which many farmers are facing. Knowing what to do now and what you need to consider over the next 18 months will help you plan and give peace of mind so you can get on with farming. Our budgeting info and tools online include nine tactics to help you make decisions during this period that best suit your farm. These tactics are based on research, data and learning from similar past seasons.

dairynz.co.nz/business-tactics

Body condition score strategies

Assess available feed supplies together with regular monitoring of Body Condition Score's (BCS) and make decisions early, so you can sort out low-condition cows. This section of our website offers strategies to achieve ideal BCS, including drying off low-producing cows early, regularly monitoring heifers' weight and BCS, giving younger cows more dry time, splitting herds based on BCS, staggering dry-off, and part-season once-a-day milking.

dairynz.co.nz/bcs-strategies



BAY OF PLENTY

Farming smarter with data

A farmer-led Focus on Dairying project is helping Bay of Plenty farmers improve farm profitability and manage summer dry, while farming sustainably.

The project was started around 2007 by an earlier generation of local farmers, using one primary focus farm. Its new generation of farmers has seen it extended into four monitor farms (Ōpōtiki, Awakeri, Galatea and Pongakawa), each with a different farm system.

Data directly

Project committee chair, Jordyn Crouch, says a Friday email (also posted on social media) provides around 700 farmers with a 'real-time' weekly on-farm snapshot – and a summary of the year so far – for each monitor farm. The committee can also tap into years' worth of info in DairyNZ's Dairybase. "It's about getting a 'face' behind each farm and bringing those communities together," says Jordyn.

Two of those faces belong to Awakeri monitor farm owners, Matt and Genna Barr. Matt's also on the project's committee.

"People message me even before the weekly emails come out, to check my pasture's growth," says Matt. "One of our big focus areas is how much grass we're harvesting every year. Being part of this project is helping me keep a tighter eye on that, definitely."

Four monitor farms' real-time data help local farmers make smarter economic and environmental decisions on-farm.





Matt and wife Genna get a lot of take-home messages out of project field days. (Photo: dairyexporter.co.nz)

Field days a favourite

Matt and Jordyn also rate the project's field days highly.

"Last year, we had 150 farmers turn up to a facial eczema field day," says Jordyn. "We also had another big turnout for a financials field day."

Summer topics include how to achieve a 'low-cost summer dry' period; and addressing farm performance issues after a tough 2022. An upcoming autumn field day looks at future farming challenges and extending the duration of cow lactation.

Jordyn says the project's information and learning opportunities are providing farmers with knowledge and solutions that in future could be adapted by farmers from around New Zealand.

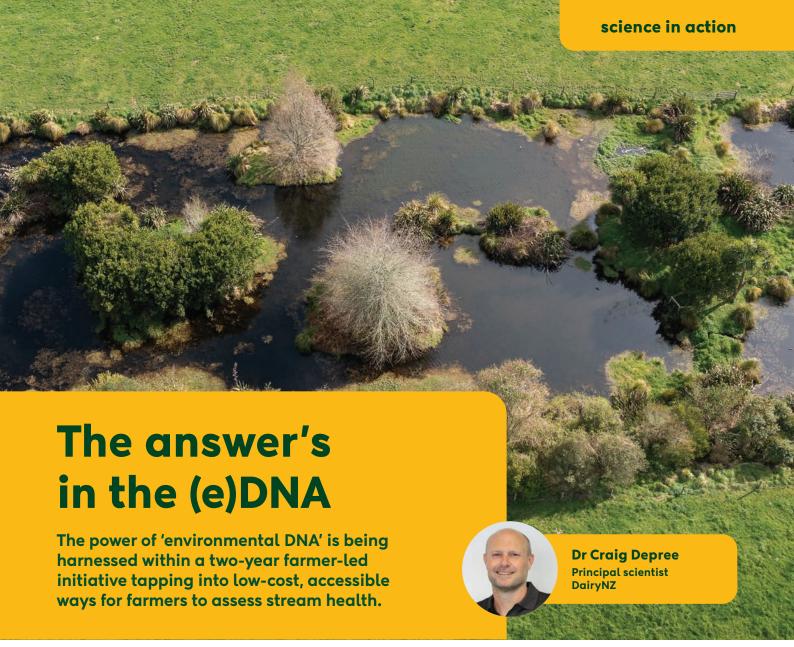
"Our long-term vision is that our farmers will still be here farming in 20 years."

What's in it for farmers?

Jordyn says the project has three key benefits:

- It's driven by next-generation farmers who make sure it offers timely and relevant information.
- It provides connection, through the great farmer turnout we've had to our events.
- A lot of the challenges we're addressing now, will be faced by other New Zealand farmers in the future, who will be able to adapt what we learn for themselves.

The Focus on Dairying project is principally funded and supported by DairyNZ. Read more at dairynz.co.nz/regional-projects



Most farmers will be aware of the increasing number of rules and regulations in Aotearoa/New Zealand in response to public concern over the state of water quality.

The 2020 National Policy Statement for Freshwater Management (NPS-FM)¹ introduced a raft of new, compulsory, environmental indicators called 'attributes', which include important aquatic life like stream bugs (aka macroinvertebrates) and native fish.

This has provided an opportunity for farmers (and collectively the agricultural sector) to shift the 'water quality conversation' from contaminant concentrations (e.g., nitrogen), to what's living and growing in streams, to provide a more holistic assessment of stream condition. This kind of information that new eDNA methods offer, better reflects what farmers and communities want to achieve to support healthy streams and other waterways.

Stream life monitoring – benefits

Shifting the focus from contaminant concentrations to stream life, and more generally, stream health, brings potential benefits, as outlined below.

Greater awareness/appreciation of the ecological value of streams (including modified water courses/drains) in pastoral-dominated catchments.

Monitoring outputs show whether a farm stream has, for example, kōkopu (several types of fish), kōura (freshwater crayfish) and tuna (eel) present, rather than rows of contaminant concentrations recorded to two or more decimal places.

Greater awareness of the value of streams/waterways on farms.

This should result in greater 'buy-in' from the farming community to protect and/or enhance their streams' ecological value.

Efforts to improve stream quality are focused on actions that make streams a better environment for fish and other stream life

While it is important to reduce the loss of contaminants from farmland into waterways, it is also important to enhance stream habitat to improve stream health.

Using eDNA

Conventional ecological monitoring to work out the types of aquatic life present (i.e., fish and macroinvertebrates) is expensive, because a professional freshwater ecologist needs to travel to the site, and do the sampling, analysis, and reporting. In the case of fish surveys, special electro-fishing equipment and trained personnel would also be needed.

However, in the last few years, the environmental DNA (eDNA) method has continued to develop in leaps and bounds². For a few hundred dollars, anyone can use eDNA to sample stream water and identify the genetic material of hundreds of animals, plants and microbes that live in, and around, the stream, and to provide an overall score for stream condition.

Trialling eDNA

Over the last two years, DairyNZ and farmers in several catchments across different regions have been trialling eDNA. The aim of these trials has been to explore the potential for eDNA to provide farmers, catchment groups, and collectively the sector, with more meaningful information about the condition and ecological value of streams flowing through productive agricultural catchments. We outline one of these trials below, where we worked with farmers in the Upper Manawatū Catchment.

As part of the Tararua Plantain Project on reducing nitrogen loss (dairynz.co.nz/tararua), DairyNZ started working with farmers in the Upper Manawatū Catchment in October 2020.

A monitoring programme consisting of 22 stream sites was set up, with farmers taking monthly water quality samples to determine contaminant concentrations (including nitrogen (N), phosphorus (P), sediment and *E.coli*. In the summer of 2020/21, a professional ecologist assessed macroinvertebrates, which are a good measure of stream health. In subsequent summers (2021/22 and 2022/23), these macroinvertebrate assessments were repeated and complemented with farmers deploying eDNA samplers at their stream sites.

The monitored catchments (i.e., land area upstream of the monitoring site) were relatively small. They had an average size of 2675ha and were dominated by pastoral farming (83% of catchment), of which 44% was dairying and 39% was drystock farming. The catchments, on average, had low amounts of native landcover (16%), except for two sites (#2 and #12) which had >50% native landcover.

Monitoring results

Figures 1a, 1b and 1c (page 27, right) show how different stream health assessment approaches across the 22 Upper Manawatu Catchment sites returned different results in relation to regulatory targets. Stream condition in relation to these targets is shown as excellent (blue), good (green), average (yellow) and poor (pink).

Figure 1a shows traditional contaminant concentration monitoring of nitrates/nitrogen, with 12 sites reading as



Farmers can use this simple water sampling tool to collect eDNA. Samples are then sent to a lab for analysis, to provide an overall estimate of stream condition.

exceeding the regulatory target (i.e. limit). For this kind of monitoring at these sites, the average reduction needed in nitrate-nitrogen to meet the regional regulatory target is almost 80%. Using this assessment method, over half the sites (12 out of 22) exceeded regional regulatory targets for nitrates/nitrogen levels.

However, Figure 1b shows that when macroinvertebrate health was used to indicate stream health, half the sites had 'good', and the other half had 'average' stream health in relation to regional regulatory targets. Figure 1c shows stream health results measured by farmers using eDNA samplers were similarly dominated by average to good scores.

These results highlight the large uncertainties in linking stream health to contaminant targets/limits (in this case nitrate-nitrogen) included in regulatory plans. For example, most of Horizons Regional Council's *One Plan* N targets³ are not 'effects-based' thresholds related to protecting stream life.

Detecting fish and other taonga species

Based on 20 sites analysed for eDNA in the 2022/23 summer:

- 18 sites had native fish detected: including torrentfish, common bully, dwarf galaxias, shortfin tuna, longfin tuna and kaharore bully
- 2 sites had native freshwater mussel (kākahi)
- 9 sites had native freshwater crayfish (kōura)
- 11 sites had rainbow and/or brown trout.

FIGURE 1a

Stream monitoring results for 22 Manawatū sites (Nitrates/nitrogen levels)

NITRATE CONCENTRATION

Median of monthly samples taken from October 2020 to June 2023.

- National bottom-line for nitrate toxicity (2.4 mg/L).
- Regional targets for Upper Manawatu streams [Horizons One Plan, 0.444 and 0.167 mg/L for 'upland' and 'lowland' streams, respectively].
- * Sites exceeding regional regulatory targets for nitrates/nitrogen levels.



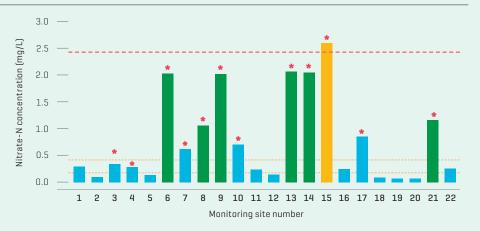


FIGURE 1b

Stream monitoring results for 22 Manawatū sites (macroinvertebrates)

MACROINVERTEBRATE HEALTH (MCI)

Average of summer sampling results from 2020/21, 2021/22 and 2022/23. Stream health was based on professional ecological monitoring of stream macroinvertebrates.

- National bottom line for macroinvertebrate health (MCI).
- o excellent o good o average



FIGURE 1c

Stream condition results for 22 Manawatū sites (based on farmer-deployed samplings)

eDNA STREAM CONDITION

Average of summer sampling 2021/22 and 2022/23).

- Level at which stream condition is classified as 'poor'.
- excellent good
 average poor

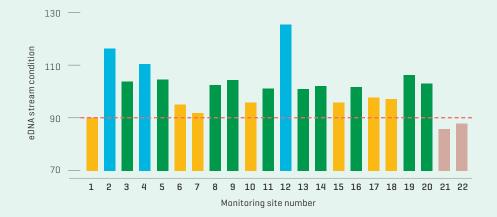
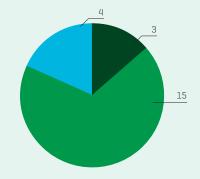


FIGURE 2

Comparison of stream health assessments: professional ecologist (macroinvertebrates) versus farmer-deployers eDNA samplers.

- Number of sites where eDNA and macro invertebrates health grades were the same.
- Number of sites where eDNA showed health grade better than macro invertebrates.
- Number of sites where eDNA showed health grade worse than macro invertebrates



Farmer versus ecologist comparisons

Figure 2 (bottom of previous page) shows how comparable the two assessment methods were, with farmer-assessed eDNA methods yielding the same 'grade' as the ecologist's macroinvertebrate scores at 15 of 22 sites. At the other seven sites, three eDNA assessments were one grade better, and of four sites, one grade worse than the macroinvertebrate score. The eDNA method indicated two sites (#21 and #22) had poor stream health, whereas these two sites were graded as average, based on macroinvertebrate health. The number of sites for each grading is shown on the pie chart.

Even with a poor health assessment, there are still positives. For example, site 21 was one of just two sites where kākahi (freshwater mussels) were detected, and this site also had longfin tuna, shortfin tuna and kaharore bullies (native fish) present.

The eDNA stream condition score appeared to be quite robust, showing on average 1% variation between the 2021/22 and 2022/23 summer sampling. This is encouraging, as stable annual assessments should provide a reliable baseline from which improvements in stream condition can be measured as a result of on-farm actions, such as riparian restoration (see feature box below).

Shaded streams are healthier streams

Planting natives along stream bank (riparian) areas provide the following benefits to stream habitats:

- Less sediment, as planting filters any runoff, and stabilises stream banks. (Excessive sediment is a major cause of degraded aquatic life in streams).
- Increased shading of stream beds, which cools water temperatures (many fish and insects require temperatures <20°C, some even lower); and reduces unwanted plant/algae growth.
- Cooler temperatures and less unwanted plant/ algae growth (which can improve levels of dissolved oxygen that fish and other life need to survive).
- Lower susceptibility of streams to unwanted algae growth can result in streams having less stringent nutrient limits in regulatory plans⁴.
- Enhanced instream fish habitat associated with vegetation (e.g., fallen branches and roots, and overhanging trees and plants) and improved streamside habitat for insects whose adult phases require these elements.
- Increased numbers of terrestrial insects. These can be an important food source for fish.
- Improved stream habitat also supports those insects that lay eggs within streams.



DairyNZ's Adam Duker with local farmers from Raparapawai stream (Tararua Catchment). Water sampling using the eDNA method an easier way for farmers to measure their streams' health.

The bottom line

It appears that eDNA assessments of stream health can provide a relatively low-cost and accessible methodology for farmers and catchment groups to provide an estimate of stream condition. They also help to identify the presence of important *taonga* species and those with threatened conservation status.

Feedback from farmers in the Manawatū sampling programme indicated eDNA results are more 'relatable' to farmers and catchment groups. Farmers had negative feelings toward the lack of relevance and meaning of the monthly water quality monitoring of contaminant concentrations (which vary seasonally and after flood events). They also tended to be anxious if concentrations were not below certain thresholds.

In contrast, farmers were a lot more positive when they had information on overall stream conditions, and the presence (or absence) of native fish, kõura and kākahi, emphasising the living (ecological) value of the stream flowing through their farm.

Key Points

- 1. Water quality is about more than just its contaminant levels (e.g., nitrogen).
- 2. Concentrations of contaminants alone are also not necessarily good indicators of stream health.
- 3. 'Environmental DNA' (eDNA) is a new and accessible method farmers and catchment groups can use to collect more meaningful information on the health and ecological value of their streams.
- 4. The method, trialled in the upper Manawatū Catchment, made it easier for these groups to identify hundreds of different plants, animals, fish and insects that live in and around streams.
- 5. Planting native vegetation along stream banks (to enhance stream shading and bank stability) is one of the most effective actions farmers can do to improve their streams' health⁵.

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