

Inside Dairy

July 2019

Your levy in action

PICTURE *of* HEALTH

A healthy herd starts with
a thriving team

FIELDAYS
HIGHLIGHTS &
PHOTOS

What are
your cattle
saying?



FEED MYTHS
BUSTED



DairyNZ



over the fence...

In this *Inside Dairy*, we explore a topic that's close to all our hearts – looking after our animals.

Animal health is a key priority at this busy time of year. That's why we've packed this July edition with practical advice for preventing and recognising animal health issues. We also explore the cross-benefits of great animal health care (e.g. managing bovine viral diarrhoea – see page 16) with overall biosecurity, which is front of mind as we enter another season focusing on eradicating *Mycoplasma bovis* (*M. bovis*).

DairyNZ experts give their advice on preventing lameness during calving, meeting heifers' health needs, understanding cattle behaviour, myths around waste milk and starch-based feeds, and more.

Of course, a key part of caring for the herd is caring for the team. Northland farmers Mark and Vicky Meyer do that brilliantly, and they share their approach to keeping cows and crew thriving in this month's cover story.

Winter is upon us and, at DairyNZ, we appreciate how complex this can be if you're grazing cows on crop. It's important to make sure you have a plan for winter grazing. To ensure you have a successful winter, visit dairynz.co.nz/wintering for advice and tools to support the best possible outcomes for you, your cows and the environment.

We're working through the details of the Biosecurity Response Levy that will be put in place to pay dairy's share of the *M. bovis* response. We will let you know as soon as we have a confirmed date for the new levy, providing at least 30-days' prior notice to collection.

And we continue to work with industry partners on preparing for the Zero Carbon Bill select committee process.

Finally, kia ora to everyone I met at Fieldays last month. As always, it was great to catch up with many of you in person, and really good to see the conversations, engagement and celebration of all things rural at Fieldays.

Please email me if you have any thoughts, feedback or questions – tim.mackle@ceo.dairynz.co.nz

Tim Mackle
Chief executive DairyNZ



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Read how a Northland farm's teamwork, talking and time off are keeping staff and stock thriving.

12 Busting feed myths

Can you feed calves waste milk? Will feeding starch over fibre lead to reproduction gains? Find out in our two Mythbusters this month.

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On the cover: For Northland farmers Mark and Vicki Meyer, building a healthy herd starts with looking after the team. The family (left to right): Vicki, Jessica (11), Carla (13), Mark, Emma (17) and Daniel (16), with former calf club favourites.

TAKE 5... TIPS FOR FARMERS

1. Protect your calves
Calves can contract *M. bovis* by consuming milk from infected cows. So, if you're buying or selling calves or milk, it's important to follow some simple steps to reduce the risk of spreading *M. bovis* and other diseases. Find out the steps at dairynz.co.nz/mbovis

2. Houses all in order? 
Quality accommodation's a significant factor in attracting and retaining on-farm staff. Make sure your employees' houses are up to standard and tenancy agreements have been completed. It shows you care – and it's good business practice. Check out dairynz.co.nz/accommodation

3. Cost-effective pain relief
All methods of disbudding require pain relief. From October this year local anaesthetic is required for calves of all ages. There are exciting new cost-effective options available to dramatically reduce pain once the local anaesthetic has worn off. Talk to your vet or contractor, and visit dairynz.co.nz/disbudding

4. Farmers and climate change 
Did you know that together, nitrous oxide and methane from dairying make up nearly a quarter of New Zealand's total greenhouse gas emissions? Find out what this means for farmers, what you can do about it and get answers to frequently asked questions at dairynz.co.nz/climate

5. Homing in on herd health
Herd health problems can cost you time and money. To improve cow health, you need accurate records and a strategic approach to treatment and prevention. Use records to assess levels of prevalence against recommended triggers. Get started using the cow health checklist on pages 94 and 95 of DairyNZ's *InCalf* book – dairynz.co.nz/incalf-book 

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We appreciate your feedback

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FIELDAYS 2019 – IT'S A WRAP!

MORE THAN 128,000 PEOPLE ATTENDED THIS YEAR'S FIELDAYS AT MYSTERY CREEK IN HAMILTON. DAIRYNZ CHATTED WITH MANY OF THEM – HERE ARE A FEW HIGHLIGHTS.

DairyNZ chief executive Tim Mackle says Fieldays is an important date in the dairy diary and a good opportunity to connect with farmers and the public.

"It's a week where the entire country's focus is on the agricultural sector, and where farmers, partner organisations and stakeholders converge at Mystery Creek," he says.

"During the week, we enjoyed many quality conversations with farmers about what we're achieving with their levy. We also answered questions and showcased new tools to help make the most of the opportunities in dairying.

"At the Careers and Education Hub, we talked with many parents and school students about the rewards and opportunities available in farming, agribusiness and science. Attracting talented, motivated young people, who want to make a difference, is vital for the future of dairying."

Farming visitors to the main DairyNZ stand in the Pavilion had a chance to test their knowledge about where their levy goes. They also talked to DairyNZ directors, senior staff and scientists and found out more about tools and resources available. Many farmers entered our Farm Gauge competition. Farm Gauge is an online tool to help you assess your farm business, identify opportunities and create an action plan. For more on making it work for you, visit dairynz.co.nz/farmgauge

DairyNZ also had a presence at the Health and Wellbeing Hub, talking to farmers about the benefits of incorporating the Five Ways of Wellbeing – connecting, giving, taking notice, being active and learning – into daily activities for their physical and mental wellbeing.



Once again, our Rosie Show was popular with younger Fieldays visitors. More than 1600 parents and children visited DairyNZ's education site in the old schoolhouse in the Heritage Village. They and their parents learnt about life on a dairy farm and where their milk comes from.

- ➔ To find out more about DairyNZ's education programme, visit dairynz.co.nz/education
- ➔ To find out more about the Five Ways of Wellbeing, visit dairynz.co.nz/wellbeing
- ➔ For more about where your levy goes, visit dairynz.co.nz/levy





CLEAR HEADS *and a* HEALTHY HERD



Keeping people and animals in good nick is a top priority for Vicki and Mark, seen here with their faithful hounds, Abbey and Digger.

**For Northland farmers
Mark and Vicki Meyer,
keeping their cows thriving
starts with keeping their
farm team thriving, even in
the busy winter months.**

Life hasn't always been stress-free for the Meyers, who farm at Tangiteroria between Whangarei and Dargaville. They bought their first farm, a 200-cow operation, in 2006 after working their way up from sharemilking. The couple were as "pleased as punch" to become farm owners but were feeling frazzled after only a year.

"In the first year of farm ownership, we milked 200 cows twice a day," says Mark. "It was constant: milking, calving, mating, getting the crops in the ground, then feeding them out. As a one-man band you never have any spare time, and family life suffered. I said to our bank manager, 'If this is farm ownership, you can have it back'. He suggested we move entirely to once-a-day (OAD) milking."



FARM FACTS

OWNERS

Mark and Vicki Meyer

MANAGER

Logan Williams

LOCATION

Tangiteroria, Northland

FARM SIZE

188ha (160 effective)

HERD SIZE

395 Kiwi-cross

PRODUCTION

110,000 to 126,000kg MS
(once a day)



When Mark and Vicki bought a bigger 330-cow farm up the road, they increased the herd to 400. For the first three years, they milked 250 cows once a day (OAD) all season and 150 cows twice a day until Christmas.

“Since Logan Williams, our farm manager, joined us five years ago, we’ve been OAD all season. This has reduced stress levels for us and the cows, and we get more family time. Since then, we haven’t looked back,” says Mark.

Healthy staff, healthy stock

Keeping people and animals in top condition is a priority for the

Meyers. This involves two lots of planning: one for the team to ensure everyone gets regular time off, even at the busiest time of year; and one for the animals, focusing on prevention rather than cure.

The values that Mark, Vicki and Logan share enable them to work well together. They work hard, look after the stock and get off-farm whenever they can, but the animals are the farm’s beating heart.

“They’re precious,” says Vicki. “When you hand-rear calves from a couple of hours old, they’re like your babies and you come to know many of them. Everyone thinks I’m mad because I name half the cows.”

Taking on farm manager Logan Williams (top) five years ago has reduced stress levels for Mark and Vicki – and their cows.



Vicki and Mark see their cows as the farm's 'beating heart'.

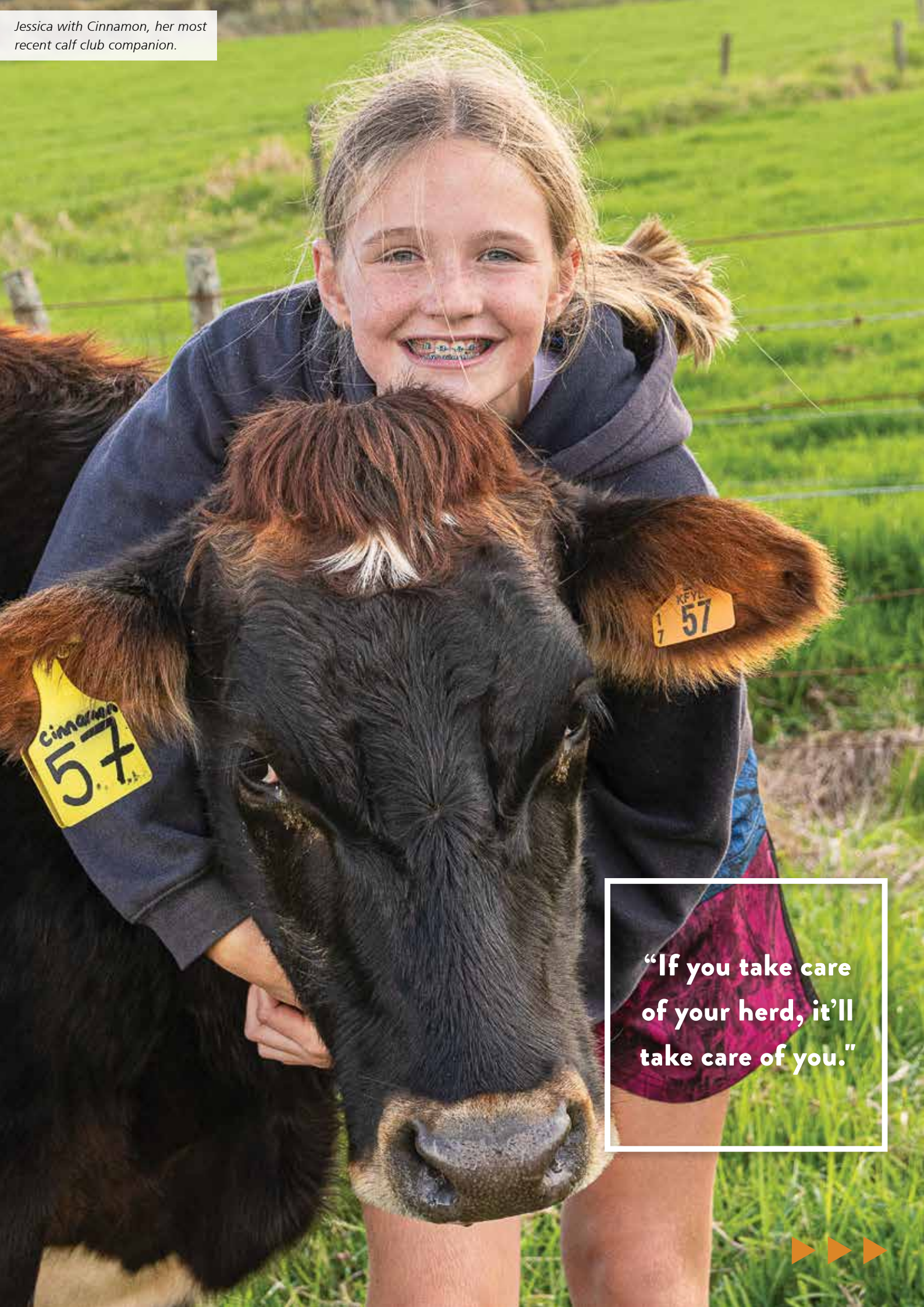


Getting the farm jobs done before calving allows everyone to have time off.



Mark and Logan are heading in the same direction when it comes to keeping people and cows healthy.





Jessica with Cinnamon, her most recent calf club companion.

“If you take care of your herd, it’ll take care of you.”





Mark regularly attends DairyNZ discussion groups, is involved with Northland's Extension 350 project and chairs Livestock Improvement Corporation's Shareholder Council.

Mark and Logan have a more down-to-earth approach.

"Without a good herd you can't pay the bills," says Mark, while Logan believes that "if you take care of your herd, it'll take care of you".

Mark says one of the best pieces of advice he's received is that cows let you know when there's something wrong.

"That's what I'm forever telling Logan and our kids: if you keep an eye out when you're shifting stock, you pick things up straight away."

Strong results from animal care programme

Logan manages the on-farm mating performance, which drives the farm business. Mark puts their high six-week in-calf rate down to a strong animal care programme, paying attention to young stock and making sure each animal goes into mating in the best condition possible.

Every year, Mark and his vet Brian Lowe, of Dargaville Veterinary Centre, work with Logan on an animal health plan. Mark says 75 to 80 percent of their vet spend focuses on prevention rather than cure.

"For example, we use dry cow therapy strategically to minimise somatic cell count (SCC) and, this year, the heifers will be teat-sealed for the first time to protect them from environmental mastitis. The calves and two-year-olds are weighed and drenched every four to five weeks and boluses are used to correct trace element and vitamin deficiencies. Pre-mating, the yearlings have a copper injection and, in the week before mating, they have a vitamin B12 shot to maximise reproductive performance," says Mark.

"Our herd health has definitely improved. Although it's difficult to put a figure on the savings, it's allowed us to fine-tune our mating performance, which gives us options as to which cows to cull and sell, so we can fast-track the genetic



MARK'S TOP TIPS FOR TAKING CARE OF STAFF

To work together successfully, you must communicate regularly.



Treat your staff the way you expect to be treated.



Share the unpleasant jobs.



Provide them with a tidy, warm home.



Involve them in discussions with your reps (fertiliser, breeding company, rural supplies).

merit of our herd."

Over the last three seasons, the herd's bulk SCC has dropped from 270,000 to 170,000 cells/millilitre across the whole season.

The mating programme starts with the entire herd being 'metrchecked' four weeks prior to mating. This year, only 10 animals required treatment. The Meyers record all pre-mating heats to identify which cows aren't cycling. These animals are checked before artificial insemination begins in the first week of October. Last year, the not-in-calf rate was just under 10 percent and the 6-week in-calf rate was 83 percent. This year's not-in-calf rate is similar, and the 6-week in-calf rate is 84 percent.

Teamwork, talking and time off

On the Meyers' farm, everyone is hands-on. Vicki handles the administrative tasks and oversees the calf rearing, but even this is a team effort.

"Once Mark and Logan have finished in the shed, they pop over to see if I need help," says Vicki.

Before calving starts at the beginning of July, the calf sheds are prepared and the farm chores are up to date. Mark and Logan talk all the time and, in the earlier part of each week, they try to do more than is strictly necessary to allow time off during the busy period.



Logan displays his haul from a kontiki session at Baylys Beach last summer.



The family pitches in to get the calf sheds ready.



A strong mating programme saw the Meyers achieve an 84 percent 6-week in-calf rate this year.

“We might get the urea on and get those types of jobs done and, on Thursday and Friday, we set up for the weekend. When it comes to Saturday and Sunday, we do the bare minimum. We milk the cows, feed the calves, get the cows and calves in, and shift the stock so we’re done by 3pm to 4pm. We structure our week around that approach. Obviously, there’s the occasional hiccup, but generally we’re home by 4.30pm during calving,” says Mark.

Working together as a team includes pitching in to cut each other’s firewood and the Meyer children even helped Logan paint his house during the last school holidays.

“If Vicki steps in while I’m away, she discusses any problems with Logan,” says Mark. “They both work really well together and aren’t afraid to discuss things and make a call rather than contacting me. We’re fortunate to have Logan as a farm manager. He’s awesome and treats the farm as his own. We discuss all aspects of running the farm together and if we need further advice, we ask for it.”

“We all manage to fit in some family time, even during the busy season.”

Happy families

Logan says it’s important for him to spend time with his partner Samantha and their two young children, Kasey (3), and Kody (2).

“It’s great to get home while it’s still daylight to hang out with the kids, otherwise you’re leaving while it’s dark in the morning and coming home after dark in the evening. We all manage to fit in some family time, even during the busy season, and I sometimes manage to go fishing at nearby Baylys Beach,” says Logan.

The Meyers get off-farm by going to watch their children play sport, which provides a good chance to catch up with other farmers. The family also likes heading along to a local bistro, run by their community during calving.

“Different organisations cook a dinner every couple of months as a fundraiser,” says Mark. “We go along for a couple of hours and chat to the neighbours. Two hours away can seem like a day and you go home rehydrated and refreshed.”

Taking all these opportunities for a break results in a team that’s better able to care for the herd, says Mark.

“You’ve got a clearer mind when you go back to work, and you work more efficiently. And at the end of the day, if we’re all feeling on the top of our game, we can take better care of the herd and spot any animal health issues more quickly.”

■ Words: Christine Hartley ■ Photos: John Slater

CALVING: RISK FACTOR FOR LAMENESS

Recent science has highlighted calving as one of the key risk factors for claw horn lameness. While it's impossible to stop the calving effect, your team can manage other factors to reduce the overall risk of lameness.

Steps to prevent lameness

Reducing lameness is better for your business, better for your team and, most importantly, better for your cows. Now is the time to take action, as the calving period is when your animals' hooves are most vulnerable.

1. Get your team together to make a plan for managing lameness around the calving period. Focus on the management factors shown right, and on the cow and environmental factors. Start by using DairyNZ's *Preventing and managing lameness* guide, available at dairynz.co.nz/lameness
2. Seek help from a trained Healthy Hoof provider – find one at dairynz.co.nz/healthy-hoof
3. Monitor your plan and revise it as required. Remember, the calving effect lasts about eight weeks.
4. Use the new Healthy Hoof app to record all cases of lameness – dairynz.co.nz/healthyhoofapp



REMEMBER:
being new to the herd, heifers are more at risk.

THE CALVING EFFECT

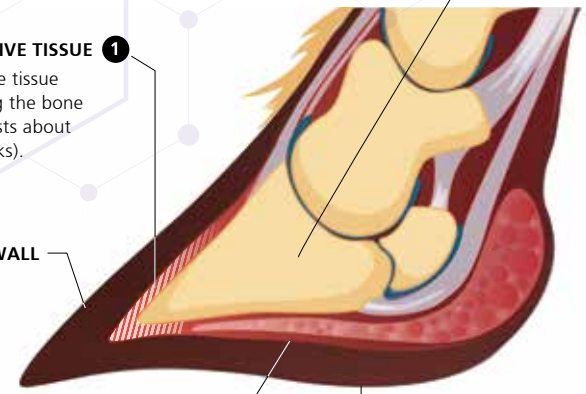
CONNECTIVE TISSUE 1
Connective tissue supporting the bone relaxes (lasts about eight weeks).

WALL

SENSITIVE TISSUE 3
Sensitive tissue producing sole horn is more vulnerable to damage by mobile bone.

SOLE

2 BONE
Bone becomes more mobile.



OTHER RISK FACTORS

Management is another risk factor for lameness.



Stock handling (use of backing gates, pushing cows on lanes, etc.)



Time on yards



Walking distances/reduced lying times

Previous lameness treatment



Other risk factors include the environment (e.g. wet weather, track surface) and the cow (e.g. her body condition score and previous lameness).



CLAW HORN DISEASE

WHITE LINE DISEASE



SOLE BRUISING (OR HAEMORRHAGE)



SOLE ABSCESS OR ULCER



Bulk milk testing resumes

Bulk milk testing for *Mycoplasma bovis* (*M. bovis*) will recommence on all New Zealand dairy farms this month.



The Ministry for Primary Industries announced last month that all dairy farms supplying milk will have a bulk sample tested from July 1. Tests will be carried out once a month and will run indefinitely.

Farmers last had their milk tested in spring 2018. This time around, the ELISA (enzyme-linked immunosorbent assay) test will be used. ELISA has proven to be a much better screening tool than the previously used PCR (polymerase chain reaction) test. This new testing method improves our sector's ability to identify infected farms and support the eradication of *M. bovis*. If you'd like to learn more about the two testing methods, go to dairynz.co.nz/mpi-testing-video

All farmers will be notified of their test results, whether negative or positive. Farms with a positive test result will be included in the *M. bovis* Programme. They will be placed under a Notice of Direction restricting cattle movements (a NOD) while sampling and testing of the herd is carried out to

determine the disease status of the farm.

If you're a farmer, you don't need to do anything. Samples will be taken by tanker operators as part of your normal milk collection process.

Autumn testing

Bulk milk samples were collected and stored fortnightly from April 15 until the end of June. This means autumn calving cows can be tested, as well as spring calvers at dry off. These are critical times for disease detection, as *M. bovis* often shows itself during times of stress. Testing of these stored samples is currently underway.

Key points



1. All dairy farms will have their milk tested for *M. bovis* from July 1.
2. Tests will be carried out once a month.
3. Farmers will be notified of their test results.

Find out more at dairynz.co.nz/mbovis



BIOSECURITY RESPONSE LEVY

DairyNZ is currently working through the details of the Biosecurity Response Levy that will be put in place to pay dairy's share of the *M. bovis* response.

We will be advising farmers as soon as we know the confirmed start date and rate of the new levy. As we outlined in the consultation in February, you will receive a minimum of 30 days' notice prior to start of collection.

**PROTECT
OUR FUTURE.**



Waste milk may be a convenient feed for calves, but is it worth the risk?

Waste milk: is it calf feed?

Waste milk has traditionally been fed to calves to dispose of milk that can't be sent for supply, but is this a good idea? DairyNZ senior scientist Jane Lacy-Hubert investigates.



With an increased focus on the responsible use of antibiotics, questions are being asked about waste milk's value as a feed source for calves, and the risks this practice might pose to the wider environment.

Waste (or 'red') milk is the milk produced by lactating cows when they're sick and receiving antimicrobial treatment for diseases such as mastitis. It also applies to the milk produced in the withholding period, which can be three to four days after treatment.

Bacterial growth and antibiotic resistance

Exposing a bacterial population (such as the calf's developing digestive tract) to low concentrations of antibiotics may encourage bacterial growth with existing resistance genes. It could also lead to other bacteria mutating and developing new ways to resist antibiotics.

The risk is that calves consuming this milk will shed antibiotic-resistant faecal bacteria into the environment. This could have unintended consequences for your calves, and for the future usefulness of the antibiotic.

This is backed up by a substantial review published in the European Union in 2017. The review found that shedding was more pronounced for younger calves (two to three weeks old), compared to six- to seven-week-old calves.

Fortunately, this shedding wasn't observed in calves fed colostrum from cows previously treated at dry-off with long-acting dry cow antibiotic products. Unfortunately, pasteurising

waste milk won't deactivate the residues, as most antibiotics are heat-stable.

Calf health and growth

Although there are few studies on this aspect, it's likely that antibiotic residues would interfere with calves establishing good gut bacteria, or that pathogens and viruses from older, sick cows could infect the young calf. If there are more antibiotic-resistant bacteria present in the gut, these issues would be harder to control.

Although waste milk may be a convenient feed for calves, is it worth the risk for the health of the replacement calf, or to the environment? One thing is certain – it cannot be fed to bobby calves, as the calf's gut is likely to absorb the antibiotic residues and cause the carcass to be rejected.

Find out more about calf care at dairynz.co.nz/calves

Myth

It's ok to feed waste milk to calves, so long as it doesn't go to bobby calves.



BUSTED

It's NOT ok to feed waste milk to ANY calves.



Are there reproduction gains in feeding starch over fibre?

In theory, starch-based feeds increase the levels of hormones involved in fertility, but does that lead to improved reproduction? DairyNZ senior scientist Jane Kay looks at what our levy-funded research has to say.



> The theory

Increasing starch-based supplements (e.g. maize grain or barley) in the diet can increase the concentrations of circulating hormones such as insulin and insulin-like growth factor 1 (IGF-I). In theory, these elevated levels of insulin and IGF-I can lead to earlier cycling, improving reproductive performance in pasture-based systems.

> The actual effect

However, the effect of increasing IGF-I on cycling and other reproductive measures is inconsistent. New Zealand research indicates that IGF-I levels explain only three percent of the variation in cycling (time to first oestrus). Additionally, increased levels of these hormones post-mating can lead to embryo death.

> Further evidence

Further evidence for the lack of effect produced when feeding cows starch-based supplements comes from a large-scale farm-systems experiment (through the Pillars of a New Dairy System* research programme – see the full results at dairynz.co.nz/pillars). This 2014 study involved three commercial farms and about 1000 cows.

In this experiment, half of each farm's herd was fed a starch-based concentrate. The other half received the same energy from a fibre-based feed.

Reproductive performance was recorded throughout the four-month study. The results highlighted there was no benefit of feeding starch-based supplements compared with fibre-based feeds on any reproductive measures. In fact, there was evidence of a risk of reduced pregnancy rates when cows consumed the high-starch diet (see graph to the right).

> Energy counts

Therefore, it is energy that is important, and if there is enough pasture, pasture is enough. If you have a feed deficit in early lactation, your focus should be on increasing the energy available to the herd, i.e. megajoules of metabolisable energy (MJ ME). The type of supplement used to achieve this is secondary and, therefore, supplement purchase decisions should be based on cents/MJ ME.

Find out more about feed supplements, feed values (ME), feed storage and density, and the milksolids response to supplements at dairynz.co.nz/supplements

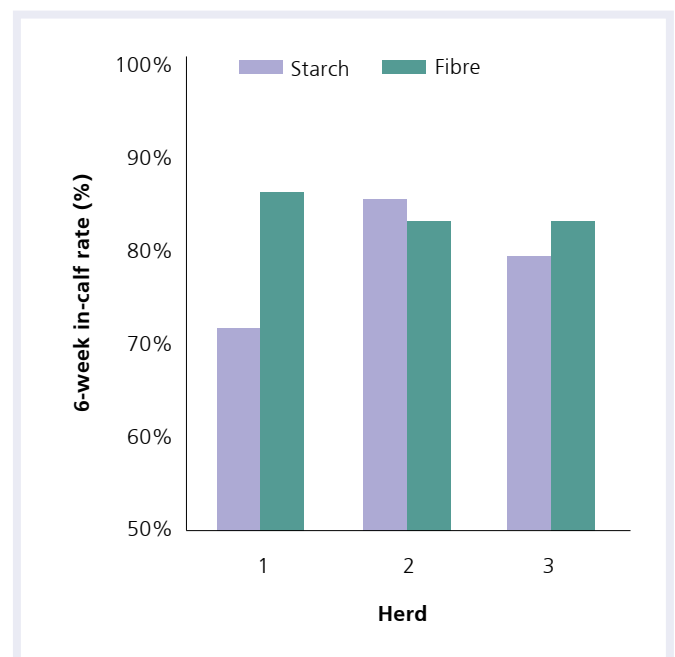
Myth Starch-based supplements are better than fibre-based supplements for cow reproduction.



BUSTED



There are no reproductive gains in feeding early-lactating cows with a starch-based supplement compared with a fibre-based supplement.



*funded by dairy farmers through DairyNZ and by the Ministry of Business, Innovation, and Employment.

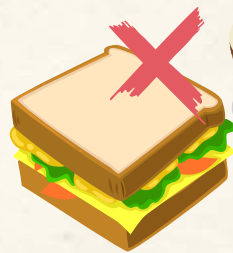
LEPTO PREVENTION

Leptospirosis is a bacterial disease that can affect all mammals. Easily transmitted via urine from animals to humans, its bacteria can lurk in damp soil and stagnant water, spreading rapidly after heavy rain.

AT WORK



COVER CUTS



DON'T EAT OR DRINK



DON'T TOUCH YOUR FACE



WIPE CLEAN PERSONAL PROTECTIVE EQUIPMENT



ON BREAKS

REMOVE GEAR



WASH YOUR HANDS



Learn more about avoiding this disease at dairynz.co.nz/lepto
Poster based on an original design by Laura Leach.

Simple guide to healthy heifers

What makes for a strong heifer health plan? Get some tips from DairyNZ developer Vanessa Robinson on how your team can plan ahead to meet heifers' specific needs.



Healthy heifers are the future of your herd, so it's time well spent to assess your heifer management strategies and put health plans in place for the new season.

Heifers' health needs are specific to their age and the farm on which they're grazing. If they move farms during their first two years of life, their stress levels increase and they become susceptible to disease, so they need a health plan that adapts with their movement.

If you're establishing a relationship with a grazier, it's important to minimise risks by developing an animal health plan and ensuring everyone involved understands their role in monitoring the animals and administering treatments.

There are five key components to a good heifer health plan.

Biosecurity

It's important to understand stock movements on your property and the potential disease exposure for your heifers. Immature animals are particularly susceptible and may be naïve to several diseases.

Vaccinations

Legally, stock owners are required to manage both tuberculosis and leptospirosis. Other diseases can be prevented by vaccination. Discuss with your grazier any diseases that have occurred on the property and make a plan with your veterinarian to give your heifers the best protection.

Parasites

Be aware of common parasites in your area, and find out what can be done to reduce any parasitic pressure. This could include farm management practices, such as using crops, as well as having drenches available.

Trace elements

The most common trace element deficiencies in New Zealand livestock are cobalt, selenium, copper and iodine. As a heifer's rumen develops, its uptake efficiency of trace elements from pasture changes. Understand any deficiencies on the property to ensure your mineral supplementation will meet heifers' needs.

Farm-specific

Mob-specific animal health plans should be agreed on with the grazing manager. Understand the farm's history, and disease exposure in the region, to identify potential risks. Know what to



look for in the livestock and how to treat them if any issues arise, e.g. theileria and facial eczema.

Finally, when you're discussing an animal health plan, it's important to reflect on previous experiences.

- How effective was last season's health plan and do you need to make changes?
- What's changed or are there new risks?

Keep learning at dairynz.co.nz/heifer-health

Key points



1. Gather all information (e.g. past disease exposure) before forming a heifer health plan.
2. Ensure all team members understand their role and agree on the plan.
3. Review past experiences and keep notes for future planning.

BVD control: a four-step plan

Controlling bovine viral diarrhoea (BVD) is vital to avoid its damaging effects on dairy herds' health, reproductive performance and productivity. DairyNZ's Samantha Tennent explains.



Managing BVD should be an important part of farmers' biosecurity measures. Failing to do so can be costly: studies in New Zealand put the cost at between about \$110 and \$180 per cow, or about \$70,000 annually for an average-sized infected herd.

About BVD

Sub-fertility, abortions, reduced milk production, and calf diarrhoea and pneumonia, are common symptoms of BVD virus infection. However, the symptoms of BVD can look similar to other diseases, so testing is essential to confirm its presence.

To control BVD you must identify each animal's status and:

- remove any persistently infected (PI) animals on-farm
- prevent any new PI animals being born on or introduced to the farm
- ensure incoming PI-clear animals are not transiently infected (TI).

PI animals are formed when naive (not immune to BVD) cows become infected with BVD in the first four to five months of pregnancy, producing a calf infected with BVD for life. PI calves often have poor immunity and appear ill-thrifty (growing more slowly than expected) but some appear normal and enter the herd. TI animals are those which are temporarily infected with BVD.



Four-step BVD control

Ensure you work with your vet through each of these steps.



1. Define

BVD diagnostic tests are highly accurate. A simple bulk milk screening test to look for antibodies against the virus is a good place to start.

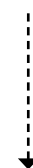


2. Assess

In: Cattle coming onto the farm, including their foetuses. People, equipment and vehicles coming onto the farm.

Out: Heifers and carry-over cows grazing off-farm, including heifers returning pregnant.

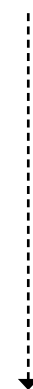
Contact: Avoid cattle contact across neighbouring fences.



3. Act

Take action to create a control plan, which could include these steps below.

- Test incoming animals (including bulls and calves born onto the property) for the virus and cull any PI animals identified.
 - Make sure bulls have been fully vaccinated prior to arrival.
 - Vaccinated animals should still be tested to confirm they're not PI.
- Vaccinate cows and heifers to protect them during their pregnancy, and vaccinate bulls used for mating.
- Change management practices to reduce the risk of exposure, e.g. put outriggers on boundary fences.



4. Monitor

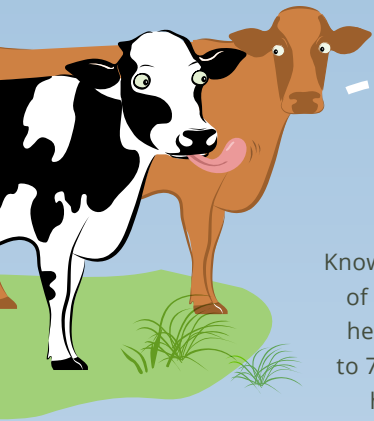
Regular monitoring is essential to detect any incursions early and minimise their impact.

Learn more

Get more BVD information and resources at dairynz.co.nz/bvd and check out our biosecurity information (and our Biosecurity WOF) at dairynz.co.nz/biosecurity

WHAT ARE YOUR CATTLE SAYING?

Whether they're wagging their ears, mooing or grooming each other, cows are constantly sending messages to us and their herd mates. Find out what's behind some of these common behaviours.



Grooming

Known as allo-grooming, this is a sign of shared bonds. Cows bond with herd mates and can recognise up to 70 cows. Keeping mobs together helps maintain social groups, providing good life opportunities.



Wagging ears

Cows waggle their ears a lot. They use their ears to communicate with other cows, to locate the direction a sound is coming from and to swat away flies.



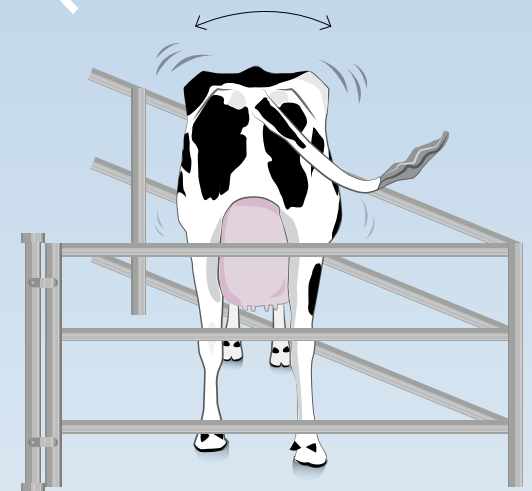
Mooing

Cows have a range of vocal expressions they use in positive situations (calves bleat when they're playing), negative situations (cows bellow when they're hungry), and you can often hear cows murmuring to their calves.



Panting

This is a sign of heat stress. Cows have limited ability for reducing their temperature through sweating so, when they're hot, they will pant.



Shifting side to side

This may indicate agitation or discomfort and can occur in stand-off pads and during milking.



Increasing eye whites

The less eye white you can see, the better the cow feels. The whites of a cow's eyes increase in reaction to surprise, alarm or distress.

Curled lips

Known as the flehmen response, bulls curl their lips to seek out cows on heat using an extra olfactory organ on the roof of their mouth.



School and community team up

Dozens of students from two North Otago primary schools recently joined up with DairyNZ, local farmers and community groups to carry out riparian planting on a farm near Kakanui township.



The planting day was organised by Noslam (North Otago Sustainable Land Management). Activities focused on an estuary and potential wetland area on a neighbouring farm next to the property of Noslam members Bridget and James McNally.

More than 80 volunteers turned up on the day, including the McNallys, their neighbours Steven and Simone McCone, 38 pupils from Kakanui and Maheno schools and members of Noslam. Community support from local businesses and organisations was also welcomed.*

Both schools are familiar with DairyNZ's education resources (see 'more info' below), including our riparian planting information. They built on this knowledge at the more recent event thanks to the expert planning and guidance of Noslam's Max Crowe. The students and other volunteers planted more than 1000 plants including flax, cabbage trees, a variety of wetland plants, low shrub tussock, kahikateas, manuka and ribbonwood.

Maheno School principal Ryan Fraser says his students had a fantastic time at the wetland planting.

"It was such a community effort and we're really proud we were part of the day. It's so important that we expose our children to sustainable and environmentally friendly practices in all areas of our lives. Our students are growing up in a time when these practices are vital for our future."

Jason Kinnaird, a teacher at Kakanui school, says each of the students thoroughly enjoyed themselves and mucked in from the get-go.

"It was a brilliant opportunity for our students to get close to nature: learning about how to plant different trees and bushes and what it takes to grow them big and strong."

Bridget McNally says all students received Rosie the Cow goodie bags from DairyNZ in recognition of their involvement.

"While the older students contributed to the planting day itself, the younger pupils will be carrying out ongoing plant monitoring and maintenance at the site."

**including Kakanui Garden Club, Kakanui Ratepayers and Improvement Society, Kakanui Volunteer Rural Fire Force, Waianakarua Lions Club, Stanger Fencing, Specialised Services Group, Fieldlab – and Fonterra Farm Source (BBQ lunch providers).*



Students from Maheno and Kakanui schools showing plenty of gusto as they plant a local farm's estuary and wetland area.

MORE INFO

DairyNZ's education programme provides information and support for classroom teachers and access to free, curriculum-based, engaging learning resources online through dairynzschoools.co.nz

To find out more about other school learning resources and projects for schools to get involved in, school farm visits and our 'cowbassador' Rosie the Cow, see dairynz.co.nz/education

meet the team



Lye Farm assistant Abby Miller operating the feed mixer wagon in the methane facility.



Meet DairyNZ's Lye Farm Team



Your levy is helping to fund world-class research at DairyNZ's Lye Farm, near Hamilton. Farm manager Bruce Sugar's team supports the science while keeping both farm and cows in top shape.

What does the Lye Farm Team do?

We're responsible for Lye Farm's 300 cows on its 100 hectares. We do a lot of short-term research and indoor trials. The science team comes up with the research and we look after the practical application of trial work and the animal treatments.

We do all the indoor work, weighing how much food the cows get and how much they leave behind – the difference tells us how much they've eaten. We also help out with blood and other sampling.

Our general farm work includes fortnightly herd-testing and rearing replacement calves up to weaning point for Lye and Scott Farm. We raised 186 calves last year.

What are the specific roles in the team?

There are six of us, including myself and my second-in-command. Other team members are involved in a range of jobs: rearing calves, weighing feed and cows, herd-testing, milking, maintaining the milking shed, and keeping accurate records for the database team.

What recent achievements is your team most proud of?

Overall, our support for the science and research teams. On top of that, we're also very proud of how we look after the cows, and also the farm – how it's kept, how it looks, planting

trees, that sort of thing. For example, a couple of years ago we dismantled a derelict cowshed on the farm and sold its scrap metal for recycling.

That, plus money collected from a team whip-round, raised funds to buy native trees to plant on Lye Farm. The benefits were two-fold: removing the shed and planting the trees each improved the farm's overall appearance and its environment.

“[We're proud of] our support for the science and research teams [and] how we look after the cows, and also the farm.”

How can people find out more?

DairyNZ has multiple projects underway at Lye Farm and its neighbour Scott Farm – you can find out more at dairynz.co.nz/research

Where possible, DairyNZ also occasionally hosts visits for groups of farmers (by arrangement) and we hold open days at our research farms.

It's also worth looking at dairynz.co.nz/careers – working on our research farms provides a great stepping stone into dairying.



Is 3-in-2 milking worth adopting?

A new levy-funded research project will explore the benefits to farmers and cows of milking three times in two days.



Milking frequency is one way farmers are choosing to evolve, which is why DairyNZ has this month started research into the human, animal and production response of milking three times in two days (3-in-2). Flexible Milking for Healthier People and Cows is a three-year project, led by DairyNZ and funded by \$499,536 from the Sustainable Farming Fund and \$306,914 from the DairyNZ Levy.

Year one

The first year of the study will focus on learning from farmers already using 3-in-2 strategically. This will help guide development of resources and information. A farmlet trial will also be set up at Lincoln University Research Farm. Four milking frequency scenarios will be tested:

- Full season twice-a-day (TAD) (the baseline for comparison, i.e. 'control' scenario).
- 3-in-2 from March.
- 3-in-2 from December.
- Full season 3-in-2.

The impact on milk production, body condition, animal behaviour, pasture production and grazing management will be measured.

Year two

The project will expand to piloting 3-in-2 on commercial farms, including measures to evaluate the effects on people of moving to a 3-in-2 system. A second trial will be conducted to investigate different intervals used with 3-in-2.

For example, 3-in-2 started as milking every 16 hours (16-16-16), but this has a night milking associated with it. It then evolved to 14-16-18 and now to 12-18-18 (which will be tested in the farmlets).

The second trial will also look at whether 10-19-19 can be used successfully (or if milking gaps could be extended out to 21-hour intervals). This would enable two milkings to be completed on Monday, Wednesday and Friday, with one milking each on Tuesday, Thursday, Saturday and Sunday.

Year three

The focus in this stage will be on modelling to predict outcomes in different flexible milking scenarios. For example, if a farmer wanted to go once-a-day (OAD) milking during calving (to reduce work at a busy time); then go TAD through peak lactation; then 3-in-2 through mid-lactation; and OAD near dry-off.



PROJECT GOALS

- Farmers and advisers will have the confidence to adopt, optimise, and support the use of 3-in-2 milking.
- Enhanced wellbeing (less hours spent working on farm and greater flexibility).
- Increased economic sustainability of farming businesses using 3-in-2 milking (through people and cow health).

Learn more about this project at dairynz.co.nz/3in2 and about OAD milking at dairynz.co.nz/oad

Dairy farmers will be given results from the project regularly and resources will be developed to help farmers make informed decisions regarding the use of 3-in-2 milking.

Ryegrass: grazing for gains



Skilled grazing management in pasture-based systems can raise ryegrass quality and nutrient value as a feed, improving production and profit. DairyNZ's Vanessa Robinson explains.

Many nutritional recommendations aimed at maximising production are based on confinement systems where cows are fed a total mixed ration (TMR) – but this approach is not always applicable to grazing dairy cows.

However, you can still improve the productivity of your herd (and your bottom line) through skilled grazing management, especially when it achieves high-quality ryegrass-dominant pastures with a high nutrient value.

This is because grazing cows in pasture-based systems have unique characteristics related to how they digest pasture, especially high-quality ryegrass. Find out what these are on the right, and check out the box below for tips and resources on improving your pasture management.

Pasture management tips

To grow and utilise as much energy as possible from pasture, grazing management should focus on feed allocation and achieving consistent grazing residuals. This enables efficient use of this valuable feed source and maintenance of pasture quality, which leads to high milksolids production throughout the season.

See dairynz.co.nz/pasture-management for more advice and resources.



“If you have enough pasture, pasture is enough.”

Carbohydrates

Pasture has less non-structural carbohydrates (soluble sugars and starches) than recommended to maximise production in a TMR diet. However, pasture's structural carbohydrates are readily digested by the grazing dairy cow and provide similar energy to soluble sugars and starches.

Studies have shown that altering the type of carbohydrate in the diet will not increase energy output (e.g. milksolids) unless energy input is increased (megajoules of metabolisable energy/ MJ ME). The only change that'll occur is a change in milk composition.

Protein

Good-quality pasture contains more protein than cows require. The protein in pasture is highly degradable (70 to 90 percent) and there's less undegradable protein than recommended. However, a fast rumen passage rate in dairy cows grazing on spring pasture ensures sufficient protein will pass through the rumen undegraded, providing sufficient metabolisable protein for the cow.

Lipids

A dairy cow has low requirements for dietary lipids (fat; three to six percent). Too much fat in diets, particularly unsaturated fatty acids, can reduce fibre digestion and decrease milk production. Pasture provides an adequate source of fat for grazing dairy cows.

Vitamins

Vitamin supplements are rarely necessary on pasture-based diets. However, supplementing the cow with vitamins A, D and E should be considered when more than 50 percent of the diet is something other than fresh pasture.

Energy

Energy (MJ ME) is typically the most limiting nutrient in a grazing dairy system. If there isn't enough quality pasture to meet the energy requirements of the herd, then a good quality supplement with a low cost/unit of ME will help maintain production levels by increasing energy intake. Of course, to achieve this, any increase in production level should outweigh the total cost of providing the supplement.

International win for DairyNZ staffer

DairyNZ's Samantha Tennent has been named among the world's top 10 young agricultural journalists.

Samantha is an animal and feed developer in our Palmerston North office but moonlights as an agricultural journalist. Her leadership skills and experience recently earned her a Young Leaders in Agricultural Journalism Award from the International Federation of Agricultural Journalists (IFAJ) and agricultural firm Alltech.

Samantha is off to America this month to participate in a leadership boot camp, before attending the IFAJ congress in Minneapolis.

She's looking forward to applying her learnings to her roles supporting New Zealand dairy farmers.

Hear about her trip in September's *Inside Dairy*.



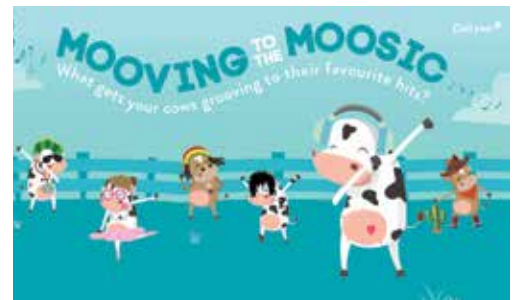
Moosic to milk by

Kiwi cows are rock chicks, a recent survey reveals.

To learn what music is played at milking time, DairyNZ and Magic Talk's rural programmes surveyed farmers and staff about what's on their playlists.

Rock music won with country and pop tied for a close second.

While the survey was light-hearted, and included prizes for three lucky farmers, the main aim was to draw attention to farmers' care for their cows – and that the sweet spot for cows is music of 100 to 120 beats per minute, such as Cyndia Lauper's 'Girls Just Wanna Have Fun'.



Zero Carbon Bill – make a submission

DairyNZ chief executive Dr Tim Mackle is encouraging dairy farmers to speak up and make a submission on the Government's proposed Climate Change Response (Zero Carbon) Amendment Bill.

"The potential implications of this legislation, in particular the targets for methane reduction, are huge for our sector. That's why farmer engagement is so important.

"It only takes a few minutes to make a submission online and it doesn't need to be long. What is important is that you share what this legislation might mean for your farm, your family and your community."

Submissions close on July 16. To learn more and make a submission, go to dairynz.co.nz/zero-carbon





DairyNZ's Wilma Foster says she and team are keen to support farmers and build networks benefitting Waikato's wider farming community.

New leader back on old turf

DairyNZ's new regional leader for Waikato, Wilma Foster, is enjoying reconnecting with farmers in her old patch.



Wilma, who is leading a team of nine consulting officers in Waikato, farmed in Te Aroha and Tirau and owned a farm in Maihihi before moving to Bay of Plenty 12 years ago. She's recognising a few familiar faces in her new role, which she started in May.

"It's great being back in the Waikato and seeing how some of those people I knew when I farmed in the region have progressed," says Wilma.

Wilma started working at DairyNZ more than 10 years ago while living in the Bay of Plenty, first as a consulting officer and more recently a farm business specialist. At the same time, she was running a dairy farm near Te Puke.

"I'm still involved in dairy farming, which keeps me very hands-on and helps in my role at DairyNZ. I'm always looking at applied and practical ways to use what comes out of DairyNZ."

Wilma is looking forward to working with her team to support farmers and build networks that the wider farming community can benefit from.

"As consulting officers, we get to see a wide range of farms in different situations. That means we can facilitate the sharing of information and ideas we see among dairy farmers. Our groups

are often a reason for farmers to get off their farm. That brings communities together and creates discussion and connection."

The team also has access to the latest research, putting them in a strong position to help answer farmers' questions and give science-backed advice, says Wilma.

"When I'm in the office, it's nice hearing the team getting contacted by farmers and being people who can be relied on for great advice."

Calving catch ups

During August, DairyNZ's Waikato consulting officer team will be hosting community breakfasts in six locations around the region. These events will give farmers an opportunity to get off the farm, have a hot breakfast and catch up with other local farmers.

Head to dairynz.co.nz/events for full details.

July events

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1	2 BAY OF PLENTY Pasture Plus: a new Taupo back to basics discussion group for those wanting to improve their pasture management skills.	3 LOWER NORTH ISLAND Join the Wanganui discussion group's winter catchup, for lunch, planning future group dates and trying out DairyNZ's self-assessment tool, 'Farm Gauge'.			6	7
8		10	11	12	13	14
15	16 TARANAKI A mid-spring dinner at Toko. Get off-farm and catch up with your neighbours and see how spring is tracking.		18 TARANAKI The Cardiff discussion group gets together at Marcus Smith's Opunake Road property to talk about winter milk and utilising fodder beet.			21
22	23	24	25	26	27	28
29	30	31	27	28	29	30

NORTHLAND

Looking to get up to date on the latest Northland research?

Check out Northland Dairy Development Trust's website to see final results of the imported feed trial, updates from the new supplements trial, and the outcomes from last month's Northland Agricultural Research Farm field day.

Visit www.nddt.nz

TARANAKI

DairyNZ received plenty of farmer questions at our recent effluent field day in Taranaki. Several people asked about accredited effluent system designers and recording resources for running land-based effluent systems. DairyNZ has plenty of information and resources on our website which can help answer these.

Visit dairynz.co.nz/effluent to see if your effluent system ticks all the boxes with the Dairy Effluent Warrant of Fitness. You can also check out the accredited system design companies, download our 'Farm Dairy Effluent Spreading Calculator' app, and more.

FOR A FULL LIST OF WHAT'S HAPPENING THIS MONTH, VISIT
DAIRYNZ.CO.NZ/EVENTS

BAY OF PLENTY

Are you signed up to the Bay of Plenty Monitor Farms emails?

Each week DairyNZ senior consulting officer Ross Bishop provides his seasonally relevant thoughts and distributes farm data from our four monitor farms in Opotiki, Matata, Galatea and Te Puke.

The email is full of local information, with each farm providing a range of data, comparing to their previous week, as well as giving an overview of what's happening on-farm.

To subscribe go to dairynz.co.nz/subscriptions

LOWER NORTH ISLAND

Several farms around the country, including a 50 percent sharemilking business in the Lower North Island, have shared their budgets for the 2019/20 season as part of the DairyNZ Budget Case Studies series.

The farm milks 233 crossbred cows on 80 hectares (effective), and production for 2019/20 is budgeted to be 92,000 kilograms of milksolids, under a medium input system.

Find out more about their budgeting considerations at dairynz.co.nz/budget-case-studies

DairyNZ consulting officers

TOP OF SOUTH ISLAND/WEST COAST

Discussion groups will take a break during calving but we're still available for dairy farmers in the area.

West Coast consulting officer Angela Leslie is inviting farmers to get in touch to arrange a visit or to enquire about seasonal DairyNZ resources that may be needed on your farm.

Nelson and Marlborough consulting officer Mark Shadwick is on leave throughout July and August, so the contact for those regions for the next couple of months is Tony Finch, head of DairyNZ's South Island Team. Contact Tony by emailing tony.finch@dairynz.co.nz or phoning 027 706 6183.

CANTERBURY/NORTH OTAGO

Make sure you and your team are well prepared for the busiest time of the year. CalvingSmart returns this month with events scheduled for Oxford (July 9), Methven (July 10) and Papakaio (July 11).

Walk away with practical tips for pre- and post-calving and learn how to ensure wellbeing for calves, cows and people. Our sessions are interactive and tailored to experience levels, so bring the whole team.

Register now at dairynz.co.nz/calvingsmart

SOUTHLAND/SOUTH OTAGO

Approach the calving season with confidence at one of three CalvingSmart events across the region – Balclutha (July 1), Gore (July 2) and Winton (July 4).

Try our calving simulator cows Frieda and Jen (with their calves Cardigan and Ferdinand). You can also hear the latest New Zealand calving research providing opportunities to improve care during calving and beyond.

Register now at dairynz.co.nz/calvingsmart



Whataroa farm assistant Jorja MacRae tries one of our calving simulator cows, which will return to this year's CalvingSmart events.

Upper North Island – Head: Sharon Morrell 027 492 2907

Northland

Regional Leader	Tareen Ellis	027 499 9021
Far North	Amy Weston	027 288 6460
Lower Northland	Tareen Ellis	027 499 9021
Whangarei West	Ryan Baxter	021 809 569

Waikato

Regional Leader	Wilma Foster	027 246 2147
South Auckland	Mike Bramley	027 486 4344
Hauraki Plains/Coromandel	Jaimee Morgan	021 245 8055
Te Aroha/Waihi	Euan Lock	027 293 4401
Cambridge/Hamilton	Lizzie Moore	021 242 2127
Orini/Tatuanui	Brigitte Ravera	027 288 1244
Matamata/Kereone	Frank Portegys	027 807 9685
Pirongia	Steve Canton	027 475 0918
Otorohanga/King Country	Denise Knop	027 807 9686
Arapuni	Kirsty Dickens	027 483 2205

Bay of Plenty

Regional Leader	Andrew Reid	027 292 3682
Central Plateau	Colin Grainger-Allen	021 225 8345
South Waikato/Rotorua South	Angela Clarke	027 276 2675
Eastern Bay of Plenty	Ross Bishop	027 563 1785
Western/Central Bay of Plenty	Kevin McKinley	027 288 8238

Lower North Island – Head: Rob Brazendale 021 683 139

Taranaki

Regional Leader	Rob Brazendale	021 683 139
South Taranaki	Nathan Clough	021 246 5663
Central Taranaki	Rob Brazendale	021 683 139
Coastal Taranaki	Rob Brazendale	021 683 139
North Taranaki	Lauren McEldowney	027 593 4122

Lower North Island

Horowhenua/Coastal and Southern Manawatu	Kate Stewart	027 702 3760
Wairarapa/Tararua	Rob Brazendale	021 683 139
Hawke's Bay	Gray Beagley	021 286 4346
Northern Manawatu/Wanganui/Woodville	Jo Back	021 222 9023
Central Manawatu/Rangitikei	Richard Greaves	027 244 8016

South Island – Head: Tony Finch 027 706 6183

Top of South Island/West Coast

Nelson/Marlborough	Mark Shadwick	021 287 7057
West Coast	Angela Leslie	021 277 2894

Canterbury/North Otago

Regional Leader	Rachael Russell	027 261 3250
North Canterbury	Amy Chamberlain	027 243 0943
Central Canterbury	Natalia Benquet	021 287 7059
Mid Canterbury	Stuart Moorhouse	027 513 7200
South Canterbury	Heather Donaldson	027 593 4124
North Otago	Alana Hall	027 290 5988

Southland/South Otago

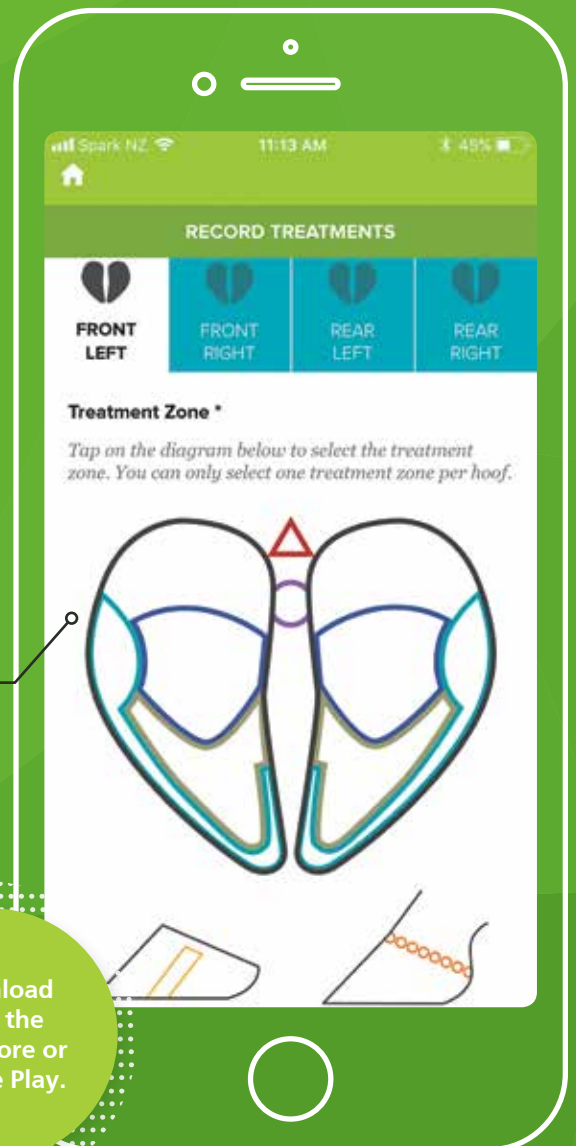
Regional Leader	Tony Finch	027 706 6183
Southwest Otago	Lucy Hall	027 524 5890
South Otago	Guy Michaels	021 302 034
Central and Northern Southland	Nicole E Hammond	021 240 8529
Eastern Southland	Nathan Nelson	021 225 6931
Western Southland	Leo Pekar	027 211 1389

IS LAMENESS COSTING YOU?

Use the Healthy Hoof app and move from lameness treatment to prevention – saving you time and money.

The Healthy Hoof app helps identify your:

- 1 Current lame cows
- 2 Recurring lame cows
- 3 Lameness type
- 4 Incidence



Download from the App Store or Google Play.

New Zealand
Permit No. 174646



The Healthy Hoof app collects lameness data so you can easily track and understand why cows get lame on your farm.

Sender: DairyNZ, Private Bag 3221, Hamilton 3240, NZ

DairyNZ