



over the fence...

Welcome to this Upper North Island special edition of *Inside Dairy*, focusing on pasture renewal and cropping.

Choosing the best approach to cropping and pasture renewal isn't just about meeting a feed deficit and generating profit. It's also about achieving top animal welfare standards and keeping environment impacts to a minimum.

In this edition, with content especially created for farmers in the Upper North Island, we hear from Waikato variable order sharemilkers Martin and Hazel Kelly, who are applying deferred grazing to achieve healthier cows, healthier pastures and a healthier bottom line.

Check out examples of how the levy is being put to work in your region (page 9), how to maximise profit from your homegrown feed (page 10), and how to use DairyNZ's InCalf Fertility Focus Report to spot clues around heat detection performance (page 21). We also explore (pages 12-13) three game-changing environmental projects that could redefine how we tackle the environmental opportunity ahead of us.

Speaking of which, the Ministry for the Environment's *Essential Freshwater* package is being released soon and will be open for consultation. Although DairyNZ will be analysing and assessing the proposals to make a submission on your behalf, I encourage you to familiarise yourself with the details.

As you'll no doubt have heard, the Biosecurity Response Levy for *Mycoplasma bovis* is collected via your dairy processor from September 1, 2019. For the 2019/20 year, the levy has been set at 2.9c/kg MS. See page 22 for details, including how to contact us if you have questions.

Finally, our AGM and latest round of board elections will take place at Newstead, Hamilton, next month. I'm looking forward to seeing many of you there. Applications for our Board of Directors close on September 5. We're sorry to be replacing Ben Allomes, who is stepping down. We have two positions for farmer directors available and voting begins from mid-September. See page 18 for more information.

Please don't hesitate to drop me a line if you have any feedback

- tim.mackle@ceo.dairynz.co.nz

Tim MackleChief executive
DairyNZ







Contents

FEATURES...

2 Saving for a rainless day

Find out how Waikato farmers Martin and Hazel Kelly's deferred grazing is helping their pasture and cropping management lead to healthier cows, pastures and profit.

10 A guide to maximising profit from your homegrown feed

DairyNZ senior scientist Maitland Manning outlines how you can grow more feed on-farm and increase your chances of higher profit.

20 Mythbuster: Do my cows need more sugar?

Spring pastures are low in soluble sugars, but does this mean you should add more sugar to cows' diets? DairyNZ's Jane Kay investigates.

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On the cover: Thanks to deferred grazing, Waikato sharemilkers Martin and Hazel Kelly (with family) are maintaining their pastures and getting more time for reseeding and building root reserves prior to autumn grazing.

IN THIS ISSUE...

- 1 Take 5
- 9 Investing in your region
- United, we're fast-tracking change 12
- DairyNZ's Upper North Island Team
- Deferred grazing on trial 16
- NZ and US dairy: worlds apart?
- Forward-thinking leaders wanted for DairyNZ board
- 19 Education update
- 21 Animal matters
- 22 Just quickly
- 23 Regional update



We appreciate your feedback

Email insidedairy@dairynz.co.nz or call us on 0800 4 DairyNZ (0800 4 324 7969). Alternatively, post to: Inside Dairy, Private Bag 3221, Hamilton 3240. For information on DairyNZ visit dairynz.co.nz.



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TAKE 5... TIPS FOR FARMERS

September Tech Series Check out the latest Tech Series magazine for an indepth analysis of fodder beet's effect on the cow's liver, and what farmers should focus on for a lower environmental footprint. We also look at plant-breeding advances to improve ryegrass hybrid vigour, and future dairy workplaces. Available with this Inside Dairy and at dairynz.co.nz/techseries

Track lame cows

Lameness prevention is critical to cow welfare, not to mention the bottom line. To reduce lameness, you must first understand the nature and scale of the problem. This is where DairyNZ's Healthy Hoof app comes in. It allows you to easily record lameness information. Check it out at dairynz.co.nz/lameness

Pasture renewal

After winter, many pastures have less-than-perfect ryegrass and clover density as a result of treading damage. We recommend over-sowing and under-sowing ryegrass seed into damaged pastures; research has shown this increases dry matter production by one to two tonne/hectare in the first two years after sowing. Learn more at dairynz.co.nz/pasture-renewal

Feed the wedge

After balance date, the feed wedge is one of your best tools to help manage pasture. A feed wedge shows your current pasture situation by ranking paddocks based on average pasture cover. It allows you to make proactive decisions to manage a surplus or deficit. Find out how to use it at dairynz.co.nz/feedwedge

Pasture Summit field days

Hosted by farmers for farmers, with technical input from dairy sector specialists including DairyNZ. Hear the latest on achieving profitable food production from grass. North Island event, September 19; South Island event, October 2. For info/ to register, email info@pasturesummit.co.nz or visit **pasturesummit.co.nz**



SAVING FOR A RAINLESS DAY



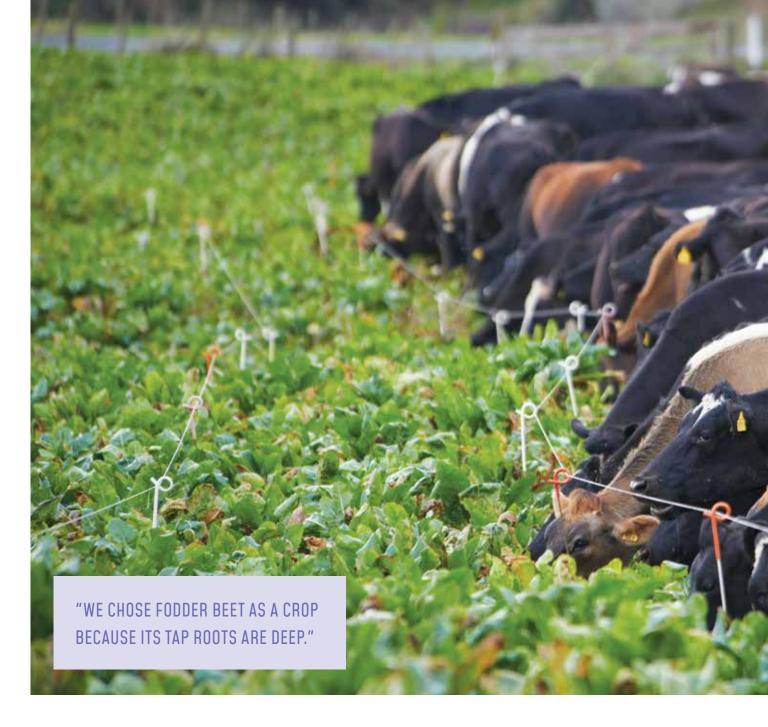
Deferred grazing is helping Waikato variable order sharemilkers Martin and Hazel Kelly to achieve healthier cows, healthier pastures and a healthier bottom line.

Martin and Hazel Kelly aren't ones to shy away from a challenge. After struggling with difficult pastures in the first months of a new job, they decided it was time for a change in approach.

"We mulled over what we could do to combat management problems with our predominantly clover pastures, and decided to try deferred grazing as a strategy," says Martin.

"Using deferred grazing on about 10 percent of the flat paddocks has helped us to maintain pasture quality over the entire farm. It also allows time for the pasture to reseed and build root reserves before autumn grazing begins."

The Kellys sharemilk on Michael and Katrina Cumpston's farm at Maihiihi, east of Otorohanga. The land has been through several incarnations: it was a dairy farm for 27 years, then a drystock and maize cropping block for six years, then reverted to dairying in 2013.



Pastures on the farm vary. There are 50-year-old ryegrass cultivars on the hills and clover/ryegrass on flats that, in the past, were cropped in maize. Many years of maize cropping have created pans in the soil, which has caused problems with pasture persistence, says Martin.

"We like a challenge, and we've been working to improve our soils by breaking up the pans. That's one of the reasons we chose fodder beet as a crop because its tap roots are deep, and when they rot in the ground and the worms move through, it helps to improve the soil structure. We're also re-grassing using Raider, a late-heading ryegrass known for its superior persistence."

Over the fence in Ireland

Hazel was brought up on a sheep, beef and deer farm near Taumarunui, King Country. In 2002, she was working on a dairy farm in Cork, Ireland, when she met local co-worker Martin. They married in New Zealand a year later, went back to Ireland in 2004 and returned to New Zealand in 2010 with

two extra passengers, son Nelson (12) and daughter Erin (9). Two more sons, Killian (5) and Seamus (3), were born in New Zealand.

Martin and Hazel began their New Zealand dairying careers as farm assistants on a high-input farm in Maihiihi. Hazel says this was a steep learning curve that helped them to improve their knowledge of Kiwi dairy farm systems. Martin also did a Primary ITO course to get to grips with the local style of dairy farming, different to what he was used to.

"When it's raining in Ireland, we put the cows inside, and they're indoors for seven to eight months of the year. We lift fodder beet instead of grazing it and, generally speaking, you don't have to worry about heatwaves either," he says with a grin.

This is the Kelly's fifth season on the property. They'd moved up the ranks on various farms in the district before starting their present job as variable order sharemilkers in 2014.

"It's a great community with lots of friendly people," says Hazel. "We love Maihihi and the lifestyle. It's great for our four children and we'd be reluctant to leave the area."



TOP TIPS

THE KELLYS' TOP TIPS FOR DEFERRED GRAZING





To get higher-quality regrowth, graze at a high residual (1700kg DM/ha) at first grazing and a lower residual on the second grazing.



Mowing to wilt grass before feeding allows better usage of grass.



Avoid shutting up too many paddocks at once ("a mistake we made in our first season").





Deferred grazing is the practice of holding over pasture that's surplus to animal requirements in spring. It is then grazed at a later date, usually in the summer or autumn, when there is a shortage of pasture.

- May suit if your farm's summer is typically a dry one.
- The less productive the area you defer, the lower the cost in the first year.
- The timing of shutting up and later grazing is crucial in relation to seedfall.

Read about DairyNZ's deferred grazing trial on page 16, and find out more about the pros and cons of deferred grazing at **dairynz.co.nz/surplus**

Picking paddocks

The Kellys are flexible in their approach to paddock selection for deferred grazing, but usually shut up paddocks on the flats when the grass is growing strongly, generally in October and November, and use it for feed in December and January.

Their choice of paddocks depends on seasonal conditions. They use deferred grazing to control the clover to ryegrass ratio to reduce the risk of bloat, which has been a problem for them in the past.

"When clover growth is too high and we're waiting for the ryegrass to catch up, we shut the paddocks either for deferred grazing or for silage" says Hazel. "If there's 80 percent clover and 20 percent ryegrass, we stop that paddock until the ryegrass has an opportunity to catch up. Timing is not hard and fast; it really depends on the weather."

Last summer, when it was dry, the couple took two approaches to grazing. They either cut the night before, then



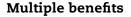
put the cows in briefly the next morning so they each got three to four kilograms of dry matter (kg DM); or they fed the paddocks like a crop, using electric fencing to strip-graze them.

"Both these seem to work well," says Martin. "But we don't send them in hungry – they'll have eaten somewhere else, or will have had baleage before they go on, so they're getting a balanced diet. They generally spend two hours on a deferred grazing paddock to get a top-up before milking. The cows aren't in the deferred grazing paddock for too long, so we leave quite high residuals of between 1500 and 1700kg DM/hectare.

Martin and Hazel also plant 3.2 hectares of fodder beet in October, a hectare of swedes in December and make 160 'large squares' of silage.







The Kellys like well-fed, contented cows. They believe that topping up their diets using deferred grazing helps to boost milk production.

"We don't like skinny cows, so we use it (deferred grazing) for health reasons too. If cows get anywhere near body condition score (BCS) 4, we'd be worried, so we try to keep animals at around BCS 4.5," says Martin.

Hazel says the way they manage pasture also has a positive impact on the bottom line.

"I think we have more pasture than some other farms in the area because we're not hammering the paddocks so hard when it's dry. This helps us to reduce costs because we need less brought-in supplement, and this season we milked until early June. Of course, using crop as well helps us to extend the production season."

Pasture renovation

Seedfall depends on when the paddocks were closed up, says Hazel.

"It was quite clover-driven for the first round, but after the second grazing or cutting, we noticed the ryegrass tillers improved, but that also depends on rainfall.

"We're quite careful with the new seedlings and keep an eye on them. We try not to send the cows in too early, to give the



FARM FACTS

VARIABLE ORDER SHAREMILKERS:

Martin & Hazel Kelly

LOCATION: Maihiihi, Otorohanga

FARM SIZE: 82ha (effective)

HERD SIZE: 244 Friesian Kiwi-cross

SYSTEM: 2

STOCKING RATE: 2.8

PRODUCTION: 82,000kg MS/year

seedlings a chance to develop to a sufficient level. We might cut and wilt and let the cows in, but not for long. On the second grazing it's even better, so we're more likely to cut and wilt then."

Cost effective tool

Martin and Hazel say that for them, deferred grazing has worked well.

"It's a cost-effective way of maintaining pasture quality on the rest of the farm and keeping the stock healthy. Transferring some feed into the dry period at little cost and having some seedfall are other benefits," says Martin.

Words: Christine Hartley Photos: Craig Brown

To read more about the pros and cons of deferred grazing, turn to page 10 and visit dairynz.co.nz/deferred

Read our lead stories on cropping and pasture renewal in other regions – check out the Lower North Island and South Island editions of this month's *Inside Dairy* at

dairynz.co.nz/insidedairy-september2019

Investing in your region

Check out these examples of how DairyNZ's been investing your levy in the Upper North Island region.

J 🔾 school children

visited a dairy farm in this region over the past year as part of our School Farm Visit Programme (nationally, 5200). This programme is supported by many volunteer dairy farmers.

Visit dairynz.co.nz/schoolfarmvisit for details.

There are

Dairy Environment Leaders

in the Upper North Island region (297 nationwide). Supported by DairyNZ, these farmers work to achieve better outcomes for the environment and farming and are active in our communities.

Visit dairynz.co.nz/DEL



in the Upper North Island region (nationally, 479) are sharing their experience with other farmers as part of DairyNZ's Dairy Connect programme.

Visit dairynz.co.nz/dairyconnect for details.

DairyNZ supports dozens of partner farms nationwide, including research, demonstration and monitor farms (dairynz.co.nz/about-us). In the Upper North Island, these include BOP Focus on Dairy (farms at Opotoki, Awakeri, Galatea and Pikowai); P3 Trust (five farms in the Hauraki area); Owl Farm in Cambridge, Waikato; and Northland Dairy Development Trust (including the Northland Agricultural Research Farm).



DairyNZ scholarships (from a total of 55

nationwide) were awarded to outstanding students from the Upper North Island region this year. These scholarships are given to bright young Kiwis studying dairy-related degrees.

Learn more at dairynz.co.nz/scholarships



We put **your voice**

directly into sector policy, by working closely with regional councils (Bay of Plenty, Waikato, Northland Regional Council), farmers and other regulatory authorities on your behalf. Our focus on regional and national projects and plan changes ensures decisions are based on good science and farmers are represented at the decision-making table. We hosted **370** discussion groups

(833 nationwide) and dozens of business progression groups and other farmer-focused events across the

> Upper North Island over the past year. We also worked with farmers, rural professionals and local government on three Upper North Island draft regional plans.

Visit dairynz.co.nz/events and dairynz.co.nz/regional-priorities

A guide to maximising profit from your homegrown feed

How do you grow more feed at home and increase your chances of higher profit? DairyNZ feed specialist Maitland Manning walks us through the steps.

For New Zealand dairy farmers, the number-one driver of profit is homegrown feed eaten. Twelve years of DairyBase data shows us that every extra tonne of homegrown dry matter (DM) eaten per hectare (ha) is worth \$300 per ha in operating profit.

To increase your farm's potential profit, you need to increase your homegrown feed eaten, increase your homegrown feed grown, or both. In this article we'll focus on the options to increase homegrown feed grown:

- Improve pasture DM production through pasture renewal.
- Use crops to fill feed deficits (summer or winter) when pastures don't grow.

Why?

Both these options cost time and money, so you'll need to give them careful consideration. When deciding whether to renew pasture or plant crops, ask yourself 'why?' Is it to:

- fix underlying causes of low pasture production?
- shift a surplus from spring to summer?
- fill a feed gap in summer or winter?
- use forages to meet environment goals?

How?

If you've decided you need to improve pasture DM production through pasture renewal, or use crops to fill feed deficits, it's time to make a plan.

1. Select paddocks

Use pasture records* to assess which paddocks to crop or renew, based on one of the following:

- Paddocks with lowest annual pasture yield.
- Paddocks with least number of grazings, averaged by size.
- Paddock soil fertility and cropping history.
- Distance from the farm dairy, if planning to graze with milking cows.

*If records are unavailable, use DairyNZ's Pasture Condition Score Tool – dairynz.co.nz/pasture-tool

2. Manage a feed deficit

Think about how you'll manage a potential spring feed pinch with paddocks taken out of the rotation to re-grass or plant into crops. Get some tips at dairynz.co.nz/feed-budgets



3. Pick the right mix

Consider pasture and crop options that best meet your 'why?' – see next page.

Check that your mix of homegrown feeds meets the nutritional requirements of your cows (milking or dry) – go to

dairynz.co.nz/nutrition

4. Choose an establishment method

The method you select will depend on your answer to the 'why?' but it'll be one of these:

- Oversow less expensive, quicker to graze than direct drilling or cultivation, but can have poorer yield.
- Direct drilling less expensive, less time-consuming, less nitrogen leaching, retains soil moisture and quicker to graze than cultivation, but can have poorer yield if not done well.
- Cultivation gives the most consistent results through weed and pest control, reduces compaction, and offers good soil coverage of seed; but is expensive, slower to graze and can lead to higher nitrogen leaching.



WHAT ARE YOUR OPTIONS FOR GROWING MORE FEED ON THE MILKING PLATFORM?



I WANT TO INCREASE PASTURE YIELDS



I WANT TO FILL A SUMMER FEED DEFICIT



I WANT TO FILL AN AUTUMN/WINTER FEED DEFICIT



SELECT PASTURE SPECIES



Choose the right species or mix. Here are some options:

- Ryegrass
- Clover
- Plantain
- Chicory in sward
 - Cocksfoot
 - Tall fescue
 - Kikuyu

Find out about the individual qualities of each at dairynz.co.nz/feed



SELECT SUMMER CROP



Choose a crop that meets your farm system needs for feed supply and demand. Some common choices are:

- Maize silage
- Summer turnips
 - Plantain
 - Chicory

Find out about the individual qualities of each at dairynz.co.nz/crops



SELECT WINTER CROP



Choose a crop that meets your farm system needs for feed supply and demand. Some common choices are:

- Fodder beet
 - Kale
 - Swedes

Find out about the individual qualities of each at dairynz.co.nz/wintering

Your decisions will depend on your region, climate and soil. For more information, go to dairynz.co.nz/feed and dairynz.co.nz/crops

We recommend you talk with your local agronomist for regionally specific advice.

United, we're fasttracking change

Through a collective approach between dairy farmers, regional councils and dairy sector partners, methods for improving the environment are quickly being adopted across New Zealand.

These three DairyNZ-led projects build on existing research and the work being done by farmers.







PLANTAIN RESEARCH COULD BE A GAME-CHANGER FOR DAIRY FARMERS.

About the project

Many dairy farmers in Tararua District are facing a massive challenge right now. Under Horizons Regional Council's *One Plan*, they're required to reduce their nitrogen (N) leaching by an average of 60 percent.

Plantain is set to play a key role in the solution. Recent DairyNZ research has found New Zealand-bred plantain cultivars reduce soil N concentration from cows' urine patches. This allows plants to utilise a greater proportion of N, which reduces N leaching by an estimated five to 30 percent, depending on soil type and the quantity of plantain in the cows' diet.

Based on these findings, Tararua dairy farmers have initiated the seven-year Tararua Plantain Project, managed by DairyNZ. Scientists from DairyNZ and partner organisations are helping farmers to make plantain work in their systems, aiming to reduce N loss while maintaining farm profit.

DairyNZ and Ministry for Primary Industries (through its Sustainable Farming Fund) are majority funders. It's also supported by Horizons Regional Council, AgResearch, Agricom, and Fonterra.

Farmer action

Paddock-scale monitoring is underway on eight farms. Water quality monitoring and modelling will be carried out as the farmers incorporate plantain into their systems. Results will be shared with farmers and the local community, showing the potential for, and actual improvements achieved from, plantain.

HINDS AND SELWYN PROJECT

INSPIRING HIGH-PERFORMANCE, LOW-FOOTPRINT FARMS.

About the project

The Hinds and Selwyn Project, funded by DairyNZ, is helping local farmers to meet nitrogen (N) loss limits and maintain profitable businesses under the *Canterbury Land and Water Regional Plan*.

DairyNZ is working alongside a group of farmers to help them identify the most appropriate solutions, considering their production systems and goals.

The information gleaned from these farms is providing a range of examples and options for other farmers to consider.

Farmer action

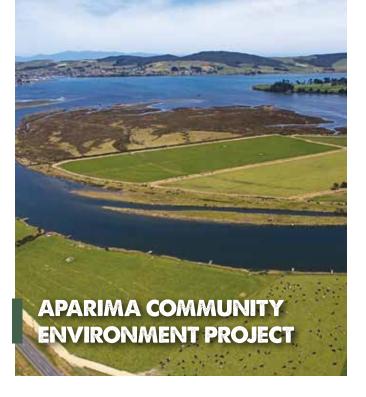
DairyNZ has worked closely with 30 partner farms since the project started in September 2018, and we'll work with another 20 in year two.

The main changes farmers have made to reduce their environmental footprint are:

- improved irrigation efficiency and effluent management
- lower N use (from more efficient use of fertiliser)
- increased use of feeds with lower N content
- using catch crops to capture available N during winter months.

Using plantain is also a common feature among the partner farmers, but the way this forage is used varies from farm to farm.





LARGE-SCALE INITIATIVE EXPECTED TO HAVE BIG EFFECT ON WATER QUALITY.

About the project

Funded and supported by DairyNZ, a group of Southland farmers have united to tackle water quality issues in the Aparima Catchment. They're encouraging *Good Farming Practice* principles on all 600 properties (of which 218 are dairy farms) in the catchment, aiming to enhance water quality for future generations.

This large-scale project involves farmers, land managers, extension experts (like DairyNZ consulting officers) and scientists. They're working together to identify, implement and track environmental actions across a wide range of farming properties and land uses. Through modelling and monitoring, the actions of every farm plan will be linked to water quality outcomes.

The Aparima Community Environment Project involves six farmer-led catchment groups, Environment Southland, DairyNZ, Beef + Lamb New Zealand, and Fonterra, plus support from other industry groups.

Farmer action

Over the next two years, all landowners in the Aparima Catchment will form a Farm Environment Plan (FEP), with support from DairyNZ. A key focus will be applying *Good Farming Practice* principles for planting and feeding winter crops. This includes taking steps to reduce surface runoff. For example, farmers will choose their crop paddock wisely, identify lowlying areas in the paddock and leave these in grass, or graze through the area quickly to reduce pugging and overland flow of sediment into waterways.

Find out more about these three projects by going to dairynz.co.nz/catchmentprojects

DAIRYNZ'S UPPER NORTH ISLAND TEAM

SNAPSHOT



REGIONS:

Northland, Waikato and Bay of Plenty (BOP)



THE TEAM:

Sharon Morrell

REGIONAL HUB LEADER:

Sharon oversees 24 team members who also work closely with other regionally based DairyNZ people. Her team includes regional leaders, consulting officers, events and administration personnel, a farm business specialist, and a Māori agribusiness specialist. Her region also has animal husbandry, policy and regional catchment specialists, Dairy Connect coordinators, plus a dedicated staff member managing the North Island *Mycoplasma bovis* (*M. bovis*) response.

HUB OFFICE:

Hub leader based across regional and head offices



REGIONAL OFFICES:

Whangarei, Morrinsville, Te Awamutu, Rotorua

WORKING FOR YOUR REGION



Our regional DairyNZ team's targeted events and regular discussion groups aim to achieve improved farm financial performance and economic resilience for farmers in our region. Discussion groups also bring farmers together, develop their technical knowledge, support farmers learning from farmers and help them resolve challenges and identify opportunities.

Our regional projects for Northland's farms consider their varied calving and milking regimes, unique climate, and their close ties to the beef sector. One example (since 2016) is the collaborative Extension 350 Project. This year sees its third launch of new target farms as part of its phased approach. These farms are strengthened over a three-year period with the support of a mentor farmer, consultant and DairyNZ (or Beef + Lamb New Zealand). It's exciting to see the changes made on the farms that are already in their third year.

In the Waikato, farmers told us that meeting environmental sustainability requirements is a big issue. We've been supporting our farmers throughout the *Healthy Rivers Plan Change One*

process to ensure their voices are heard, either directly or through informing DairyNZ's feedback to the plan. Another environmental initiative is our series of farmer field days, sharing information and farmer journeys in developing and installing fit-for-purpose effluent systems.

Our Bay of Plenty (BOP) team has been assisting farmers and local collaborative groups to get together and also link into Waikato and BOP regional council processes. The BOP's Focus on Dairying continues to deliver practical activities identified as needed by the local farmer-led committee. The related DairyBase Benchmarking Project has enabled many farmers to contribute, and to receive an analysis of their farm's performance so they can compare it to others in the area. The longevity and consistency of this farmer data is proving valuable to farmers and DairyNZ team members. We're also helping farmers in developing their people and supporting proactive farm succession, with events around this coming soon.





- Get in touch with DairyNZ's Upper North Island Team check out page 25 for contact details, or go to **dairynz.co.nz/contacts**
- Regional plans and projects get details at dairynz.co.nz/about-us
- Read about our other two regional teams and their work in the South Island and Lower North Island editions of *Inside Dairy* September at

dairynz.co.nz/insidedairy-september2019

Deferred grazing on trial



A new levy-funded research project will help us to understand the potential benefits and pitfalls of using deferred grazing, explains scientist Wendy Griffiths.

> A healthy pasture has four to five million tillers per hectare. However, we know that many farmers, particularly in the Upper North Island, are struggling to maintain this density. The drive to maximise animal production, combined with a

drier and hotter climate and insect pressure, is placing the ryegrass plant under greater stress during late spring and summer, reducing pasture persistence.

In March 2018, DairyNZ started a plot-scale trial at Scott Farm, near Hamilton, to look at ways of recovering perennial ryegrass populations through grazing management. Through our discussions with a group of Waikato dairy farmers, we identified two management interventions:

- Extending the spring grazing rotation.
- Deferred grazing of pasture in spring and summer.

These are being compared with two other management interventions:

- Autumn undersowing.
- Current best practice spring and summer management.

Over the next year and beyond, our research team will track tiller populations to see if there's a lasting benefit from deferred grazing. We'll quantify the costs involved, particularly the feed lost during deferral and the reduced energy density when paddocks are re-opened.

We'll also be seeking to better understand the potential pitfalls of this practice. There are two key questions we'll aim to answer:

- Does the endophyte transmit from seed to seedling after sitting on a warm soil surface over summer?
- Does the mulch effect that retains moisture contribute to damaging insect populations?

Results from this trial will be published in an Inside Dairy edition next year.

> If you farm in the Waikato/Bay of Plenty, are interested in trialling deferred grazing to increase the resilience of ryegrass pastures on your farm, and you'd like to join a deferred grazing group, please email wendy.griffiths@dairynz.co.nz



How to use deferred grazing

We recommend you follow these steps:

- Identify poor-performing paddocks.
- Close paddocks in line with flowering date:
 - early October for mid-heading cultivars.
 - early November for late-heading cultivars.
- Re-open paddocks to grazing in:
 - mid- to late January for mid-heading cultivars
 - late February for late-heading cultivars.
- Before grazing, check the ground for evidence of seed shed and stomp on the ryegrass plants, which may have lodged, to check that seed will shed with cow traffic.
- Leave some residual after grazing and consider mowing to 7cm to 8cm to provide a mulch layer for conserving soil moisture.

By adopting these guidelines, you'll capitalise on perennial ryegrass cultivar flowering patterns and ensure there's enough recovery time for a paddock to re-enter the farm's rotation.



NZ and US dairy: worlds apart?

After visiting dairy farms in America, DairyNZ developer Samantha Tennent shares some insights into the differences and similarities between Kiwi and US dairying.

As well as being a developer in DairyNZ's Animal and Feed Team, I help to share the agricultural message in my side job as a freelance journalist. I was fortunate to receive a journalism award* that took me to Minnesota, America, for a leadership bootcamp and the annual International Federation of Agricultural Journalists (IFAJ) congress in July.

My trip included a visit to three dairy farms – with herd sizes of 400, 9500 and 206 cows, respectively – which showed me the great differences between New Zealand and US dairy farming. On the farms I saw, the cows are kept inside from birth, never stepping on a blade of fresh grass. Since the animals are indoors, there are no fences outside; we drove past miles of farmland and didn't see a single fence.

I learned that US herds are milked year-round. In one day, farmers are checking springers, collecting calves, feeding calves, feeding heifers, detecting heats, artificially inseminating, feeding the herd, milking, spreading effluent and performing many other tasks that, here in New Zealand, we do in seasonal blocks. The herds I saw are on total mixed rations, fed consistently year-round. The cows' feet are on regular trimming schedules, and the animals are given a range of opportunities to get pregnant.

The US Government passed a bill in 2018 to better support its farmers. Farmers are offered a dairy margin recovery programme, like an insurance policy against fluctuating milk prices. Another

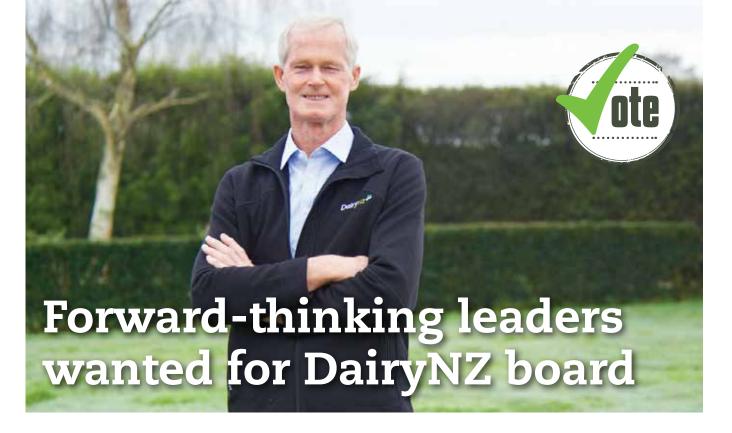
bill has been passed to help farmers cover lost trade. Without this protection, many farms wouldn't survive, which would ruin rural communities.

Although the US dairy system is a world away from our pasture-based, seasonal set-up, the challenges their farmers face are close to home. Labour is a consistent theme; farmers struggle to find willing, capable people and they look to imported labour to ease the pressure (although, they also face immigration limitations). Farmers also deal with broadband and rural health care problems. And although US farmers have government support, they're still facing issues with trade and markets. Volatility is confronting. Sound familiar?

Overall, seeing first-hand how US farms operate was a brilliant experience. It was eye-opening to discover that our dairy systems are vastly different, but that we also have much in common in terms of the challenges.

A huge thanks to Alltech, IFAJ, the NZ Guild of Agricultural Journalists and Communicators, DairyNZ, the Agricultural and Marketing Research and Development Trust (AGMARDT), Rongotea Lions and my family for supporting me on this adventure.

*The Alltech-International Federation of Agricultural Journalists (IFAJ) Young Leaders in Agricultural Journalism Award.



Farmer leaders with a vision for the future of dairying and a desire to influence its direction are encouraged to apply for two roles on DairyNZ's board.

Dairy farmers have until Thursday, September 5, to get nominations in for DairyNZ's Board of Directors. This year, elections are taking place for two farmer-elected directors and a Directors Remuneration Committee member.

DairyNZ chairman Jim van der Poel encourages dairy farmers who are strategic thinkers, future-focused and have experience in governance and leadership to consider applying.

"Farmer-elected directors play a really key role on DairyNZ's board and we are keen to have skilled, forward-thinking dairy leaders join our team," he says.

"Farmer-elected directors play a really key role on DairyNZ's board."

"So, we are looking for people who understand farm systems, research and development, policy and advocacy. Candidates should also have an understanding and interest in driving *Dairy Tomorrow* and, therefore, a vision of what the future of dairy looks like."

Jim says candidates must have the best interests of all New Zealand dairy farmers at heart.

All farmers paying a levy on milksolids to DairyNZ are eligible to stand for the Board of Directors and the Directors Remuneration Committee. The DairyNZ board consists of five farmer-elected directors and three board-appointed directors.

Go to **dairynz.co.nz/agm** for more information on the nomination process.

Farewell to Ben Allomes

Ben Allomes will be stepping down from DairyNZ's Board of Directors this October.

Ben was elected by levy-payers in 2011, as one of five farmer-elected directors. Since then, the Woodvillebased dairy farmer has provided key support around a range of issues, particularly people and talent.

"My wife Nicky and I have got a lot out of dairy and I really wanted to give back and repay that through governance," says Ben. "It's been such a great experience. I will miss the diversity of the board and working with them, debating and discussing things.

"I've learnt a great deal through the role, particularly through the width and breadth of DairyNZ. You're in a unique position to see the things DairyNZ do, and the scope of things the organisation works across still blows my mind. Our sector would be lesser if it weren't for DairyNZ's role in so many things."

After he stands down next month, Ben plans to spend more time with his family, on the farm and looking at new opportunities.

"I am an active relaxer, I don't sit down for long."

education update



Terrific tanker on track

Track the Tanker is DairyNZ's new levy-funded education resource released to teachers in May. It's taking students along the milk supply chain, from cow to tanker to glass.

The resource is being used in schools from Ahipara in the north, to Pitt Island (on the Chatham Islands) in the south. Its key focus is on maths and social science learning areas.

Activities include children using a protractor to calculate the angle required for each turn tanker driver Tina makes on the farm and at the farm gate. They also use a compass and Google Maps to estimate the tanker's time and distance to and from the dairy factory.

Other highlights include a series of fun activities, with students working out volume, capacity and weight, then finishing up in round robin teams competing in the 'Cow Olympics'. Here's a sample of reactions noted in teachers' blogs on our DairyNZSchools website:

- "[Our Year 5 and 6] children loved this kit, and as teachers, we found the maths concepts involved were really challenging. They provided a great opportunity for new learning."
- "Most of the children in my class live on dairy farms, so the

- 'grass-to-glass' process was incredibly relevant and of high interest for them. They LOVED the Cow Olympics!"
- "While we used it mainly as a maths focus, it was a fantastic integrated unit with learning across all areas of the curriculum. It also involved so much teamwork and cooperation and incorporated lots of measurement techniques."

This last comment comes from a teacher at Waikato's Tamahere Model Country School, an early adopter of the resource. Its pupils were delighted to see *Track the Tanker* showcased in Rosie's classroom a few weeks later while visiting National Fieldays at Mystery Creek.

"They became very animated when they saw the kit and were very keen to share what they'd been doing with it in class," says Karen Sandoy, DairyNZ's education and community engagement manager. "Judging by the ongoing positive comments being posted each week on our DairyNZ Schools website, *Track the Tanker's* popularity can only continue to grow."







Three new DairyNZ school resource kits have been released this past year to 1250 teachers, reaching 40,000 children. They include Can it Ice Cream, released in 2018, which to date has been our most popular resource.

Another kit (released to **250 teachers** in Term 3 of 2019) is *Grassroots* (stories from well-known New Zealanders who have grown up on farms).



Teachers' guides and other support resources for each kit are available for download at DairyNZSchools.co.nz

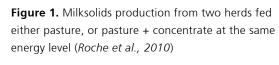
Do my cows need more sugar?

Spring pastures are low in soluble sugars, but is adding more sugar to cows' diets a cost-effective solution? DairyNZ senior scientist Jane Kay investigates.

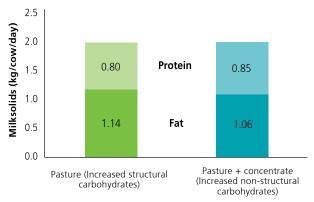
The main energy source for dairy cows comes from the fermentation of carbohydrates in their rumen. These carbohydrates can be divided into two main types: structural and non-structural. Pasture is high in structural carbohydrates, while supplementary feeds such as molasses and cereal grains are high in the non-structural carbohydrates, i.e. soluble sugars and starch.

Carbohydrates

In theory, milk production is maximised when non-structural carbohydrates make up 35 percent of the diet. In a pasturebased system, these non-structural carbohydrates are present only in relatively low levels. However, it's not cost-effective to replace the structural carbohydrates found in pasture with sugar and starch from alternative feeds.



.....



This is because the structural carbohydrates in good-quality, leafy spring pasture are highly digestible (70 to 85 percent) and can be degraded relatively quickly in the rumen. As a result, they supply similar energy to sugars and starches, so unless the total energy of the diet is increased, feeding supplements high in sugar and starch will not improve production.

It's true that increasing the amount of sugar and starch in the diet of grazing cows will alter milk composition to favour more protein and less fat. However, it won't increase energy generated from the rumen, or total milksolids production – unless the total energy of the diet is increased (see Figure 1 above).

Matching 'building blocks'

This is because plant carbohydrates are made up of the same 'building blocks' of sugar units (like Lego blocks). The only difference between the carbohydrates is how these blocks (or sugar units) are joined together.

Soluble sugars are made up of individual sugar units already pulled apart and ready to use in the rumen. In comparison, starches are made up of sugar units joined together by a simple bond.

"It's not cost-effective to replace the structural carbohydrates found in pasture with sugar and starch from alternative feeds."

The structural carbohydrates found in pastures are made up of the same sugar units, but they're joined together by a different bond to form a more complex structure.

Dairy cow digestion

Luckily, the dairy cow has enzymes in her rumen to break apart the bonds in these carbohydrates, so all the sugar units can

So, even though spring pasture may be low in sugar and starch, there are enough readily digestible carbohydrates in pasture to provide a good energy source for the lactating dairy cow.

If there is enough pasture available for your lactating cows, then pasture is enough.



Increasing the amount of sugar in my cow's diet will improve production and profitability.





The carbohydrates in good quality ryegrass pasture are readily digested and supply the cow with the same energy as sugar or starch.



A cow that isn't on heat when it's submitted for insemination costs money. It can also be risky if the submitted cow was pregnant from a previous insemination, as another mating could disrupt the pregnancy and cause the cow to lose her calf.

There are two sections of DairyNZ's InCalf Fertility Focus Report that directly relate to heat detection: 'pre-mating heats' and 'heat detection'. But you can also use '3-week submission rate' and 'conception rate' to get an idea of what's been happening on-farm.

Missing heats

> Your report's 'heat detection' figure is a good indicator of heat detection sensitivity on-farm. It includes early calved, mature cows. In theory, as these cows calved early enough and were old enough, they should be cycling. How many of those were picked up in the first three weeks of mating?

A report with a low submission rate, low heat detection but high conception rate could be hinting that heats were missed during mating. It's saying the cows that were submitted conceived well, but there were plenty of cows that weren't submitted.

> "A cow that isn't on heat when it's submitted for insemination costs money."

Inventing heats

> So, what's going on when your herd has been submitting a lot of cows, but not many of those submitted actually conceived? If your report shows a high submission rate, high heat detection, but low conception rate, that low rate of conception could indicate an issue with 'invented' heats (when someone incorrectly determines a cow is on heat).

A likely cause of invented heats is when people strive to achieve the target for submission rates without understanding the big picture. In other situations, staff are incentivised to hit the target, which can lead them to over-report heat detection (intentionally or not).

Fatigue

➤ The graph shown on detailed reports provides a great visual tool for reproductive performance. If the graph is tracking well for the first three weeks, then dropping off (then increasing again once the bulls have been put in), it's likely there's been some heat detection fatigue. Conversely, if there's a drop-off after insemination/artificial breeding (Al/AB) has finished, bull performance might be the issue.

A final point: your Fertility Focus Report can hint at what's happening on-farm, but it's best to give the information to your vet and advisers so they can help you create a thorough reproduction plan.

For more information and tools, including our InCalf Fertility Focus Report, see **dairynz.co.nz/heatdetection** and also **dairynz.co.nz/incalf**

Key points

- Use your DairyNZ InCalf Fertility Focus Report to spot clues around heat detection performance.
- Use the report to work with your vet and advisers on this season's heat detection plan.
- Ensure everyone on-farm understands the importance of selecting the right cows at the right time for mating.

just quickly

Biosecurity Response Levy - 2.9c from September 1

In February, we consulted with you about the Biosecurity Response Levy which will fund the dairy share of the Mycoplasma bovis response.

PROTECT

You told us you wanted the levy to be managed by DairyNZ, and you supported the maximum rate being set at 3.9 cents per kilogram of milksolids per year.

We listened to your feedback (more than 1700 farmers responded) and considered many options when setting the rate for the coming year. We can now confirm that:

- the Biosecurity Response Levy will be effective from September 1, 2019
- the rate will be 2.9 cents per kilogram of milksolids for the first year (until May 31,

The levy will be administered by your milk supply company. On your milk docket, it will show as 'Biosecurity Response Levy'.

If you have any questions, please contact us at info@dairynz.co.nz or call 0800 4 DAIRYNZ (0800 4 324 7969).

New dairy career progression course

Would you like to take your farming career to the next level? Sign up now to study for the Certificate in Dairy Career Progression.

This 18-week course (being piloted in the Waikato in late 2019) will be provided through DairyNZ's subsidiary, Dairy Training Limited, with support from a course tutor who has a practical farming background.

You'll learn specific financial management, technology and communication skills through practical, interactive and group learning – and trade pen and paper for user-friendly, cloudbased learning and assessment.

Phone or text Greta on 021 646 053, email greta.baynes@dairytraining.co.nz - or search for 'dairy career progression' at dairytraining.co.nz





Donate a calf to IHC

Want to make a real difference to the lives of people with intellectual disabilities?

Last year, IHC's Calf and Rural Scheme raised \$760,000 through the sale of donated calves. IHC uses those funds to provide residential care, supported living and vocational support for people with an intellectual disability.

IHC needs your support in donating calves again this year. Find out how to register to get your pink ear tags or to make a virtual donation by visiting ihc.org.nz/calf

Stepping up to detect heat



Waikato dairy farmer Kelly West talks us through her heat detection process, which produced strong results in her first season leading the mating management.

When Kelly and her husband Andrew purchased a farm in Pirongia in June 2018, Andrew continued running the existing sharemilking operation and Kelly ran the new 182-cow home farm.

With help from son Keiran, Kelly stepped up to lead the mating management – something Andrew had always done in the past – and she followed a thorough heat detection process.

"Everything is tail-painted when they leave the colostrum mob, which gives us an idea of how the cows are cycling before mating starts. This gives us confidence not to do any intervention."

The day before mating starts, Kelly and Keiran tail-paint the cows and apply scratchies.

"During mating, after cupping a row, we climb up and check the tail paint and scratchies of every cow and touch up any paint. And we're looking for numbers that we've spotted in the paddock."

The Wests were late on their technician's daily run, which gave them another opportunity to head to the paddock after they'd finished milking and quietly observe the cows, watching for signs of cows on heat.

"We usually find a few extras and, if we can, we'll walk them back to the yard before the technician arrives," says Kelly.

It's the same process in the afternoon: Kelly and Keiran head out and observe the cows, recording the numbers of any cows that appear to be on heat and will get submitted for artificial insemination (AI) the following morning.

Before mating started, Kelly spent some time showing Keiran (aged 17 at the time) the different behaviours demonstrated by the cows about to come on heat, and which were on heat and how they were acting.

Kelly checks the cows they've drafted before submitting them for Al.

"We cross-check any numbers we have written down in the notebook and check when cows were last on heat according to the mating chart."

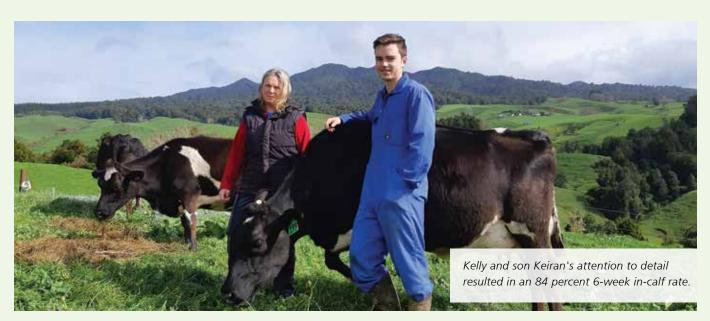
She wanted to be confident that she was submitting the right cows and was relieved with the resulting 84 percent 6-week incalf rate

"We've come a long way with this herd already. The extra effort was worthwhile. We might have been a bit slow at times, but speed comes with confidence and I'm very pleased with our results."

ReproSmart events

A series of DairyNZ ReproSmart events will provide the entire farm team with practical and tailored training for pre-mating management. The events will help farmers create and implement a plan to increase in-calf rates.

For more information visit dairynz.co.nz/events



September events

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
30						1
2	3	4	between 10.3	cussion group meets Oam and 1pm on Flat Road property	7	8
9	managem	VAIKATO discussion group will focus on spring lent at their next get-together, from Opm venue to be confirmed. 13 14 15				15
16	17	18	BAY OF PLENTY A post-calving lunch will be held by the Rerewhakaaitu discussion group at Trevor and Harriet Hamilton's Rerewhakaaitu Farm, Yankee Road. Lunch provided by Farmlands Rotorua.			
23	24	Dries Four system and manag	VAIKATO cussion group: take a rie's Te Kuiti farm, dis jement practices and uns from 11am to 1pr	cuss its catch up on	28	29

NORTHLAND

What is the vision for dairy farming in Northland? What are its priorities and what does 'good' look like?

Over the last year or so, DairyNZ has led a collaborative project called Plans for Regions, which brought together farmers, rural professionals and local governments. They identified the current and future priorities for each region, including Northland. To find out what DairyNZ and the dairy sector are planning to do in response – including research, development, adoption, communications, and policy work – visit dairynz.co.nz/p4r

BAY OF PLENTY

Keen to see how the top operators are spending their money? Farms around the country, including two owner/ operator farms near Edgecumbe and Opotiki, have shared their 2019/20 season forecast budgets.

The Edgecumbe farm business is operating on 160 hectares (effective), milking 570 to 580 Friesian cows, on two similarly sized milking platforms. The low-input Opotiki farm is in its third full season of once-a-day milking, with 270 Jersey-cross cows on 116 hectares (effective).

Find out where they plan to spend their money this season and why at **dairynz.co.nz/budgetcasestudies**

FOR A FULL LIST OF WHAT'S HAPPENING THIS MONTH, VISIT

DAIRYNZ.CO.NZ/EVENTS

TARANAKI

DairyNZ discussion groups will ramp up again this month after slowing down over calving, with plenty of interesting hosts on the schedule in September.

Discussion groups are available to all dairy farmers, so if you've got new staff or have met some new farmers recently who might not know about these events, point them to **dairynz.co.nz/events** for more information.



DairyNZ consulting officers

LOWER NI

ReproSmart, a pre-mating workshop in Central Manawatu on September 18, will offer practical and tailored training for the entire farm team.

It'll help you to understand the importance of DairyNZ's Fertility Focus Report and how it can assist you to create and carry out a plan to increase your in-calf rate. You'll also learn the importance of good heat detection and how to implement a plan for that.

Registrations are essential – sign your team up now at dairynz.co.nz/events

TOP OF SOUTH ISLAND/WEST COAST

"The dairy sector in West Coast and Top of the South is thriving through resilient farm businesses which attract the best available workforce and meet community expectations in caring for their environment and animals."

That's the vision for dairy farming in the Top of South Island and West Coast, identified in the DairyNZ-led collaborative project, Plans for Regions. This project brought together farmers, rural professionals and local governments, identified a set of current and future priorities for each region and set out what to do in response – including research, development, adoption, communications, and policy work. Visit dairynz.co.nz/p4r

CANTERBURY/NORTH OTAGO

Pasture Summit's South Island spring field day will be hosted by 2018 Pasture Summit conference speaker and farmer, Greg Roadley, on his farm in Ashburton. Get an overview of the Roadleys' farm, its business financials, and where the farm sits on costs and profit relative to other farms in the region. There'll also be a farmwalk to view/ discuss pasture and the herd; and how to adapt and thrive through the next decade. Dairy sector specialists, including DairyNZ, will also share their insights. The South Island field day is on October 2.

For info/to register, email **info@pasturesummit.co.nz** or visit **pasturesummit.co.nz**

SOUTHLAND/SOUTH OTAGO

Do you want to build a business with skill and resilience? Keen to learn from those who have built successful businesses?

Meet positive, supportive and like-minded people, get expert advice and networking opportunities and make a difference to your dairying career by joining a progression group.

Introduction sessions for Biz Start and Biz Grow progression groups are on this month in Winton (September 25) and Balclutha (September 26), so now's the perfect time to get involved.

Register your interest now at dairynz.co.nz/events

Upper North Island – Head	l: Sharon Morrell	027 492 2907	
Northland			
Regional Leader	Tareen Ellis	021 242 5719	
Far North	Amy Weston	027 288 6460	
Lower Northland	Hamish Mathews	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	Lizzy Moore	021 242 2127	
Huntly/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	
Tokoroa	Angela Clarke	027 276 2675	
Eastern Bay of Plenty	Ross Bishop	027 563 1785	
Central Bay of Plenty	Kevin McKinley	027 288 8238	
Lower North Island – Hea	d: Rob Brazendal	le 021 683 139	
Taranaki			
Regional Leader	Mark Laurence	027 704 5562	
South Taranaki Central Taranaki	Nathan Clough	021 246 5663	
Central Taranaki Coastal Taranaki	Mark Laurence Mark Laurence	027 704 5562 027 704 5562	
North Taranaki	Ian Burmeister	027 593 4122	
Lower North Island	ian barmester	027 333 1122	
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 6	5183	
Top of South Island/West Coa	st		
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	
West Otago/Gore	Lucy Hall	027 524 5890	
South Otago	Guy Michaels	021 302 034	
Central/Northern Southland Eastern Southland	Nicole E Hammond Nathan Nelson	021 240 8529	
Eastern Southland Western/Central Southland	Leo Pekar	021 225 6931 027 211 1389	
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Whatever you're facing on the farm, someone else has probably been there, done that.

In September and October, DairyNZ discussion groups will be back in full swing, providing an opportunity for you to gain knowledge and share stories.

Network with other farmers, find solutions and gain confidence – find a DairyNZ discussion group to suit you today.

To see what's available near you, visit

DAIRYNZ.CO.NZ/EVENTS

