INSIDE DAIRY

Your levy in action

Flexible milking

Better work hours, better herd health



// Succession planning $18\,$ // Steps for controlling Staph. aureus mastitis $20\,$

Dairynz



OVER THE FENCE...

Could you build more flexibility into your milking routine?

This month's *Inside Dairy* looks at flexible milking, the most common being milking three times in two days (3-in-2). Many farmers see the potential for their people – 3-in-2 offers greater flexibility, and potential to attract staff. But as you'll see, there are other benefits such as animal health, reducing some inputs or costs, and a varied routine.

It might not be a solution for everyone, but worth considering if it's something your farm might benefit from.

Fonterra is now reporting on milking efficiency to farmers, through an annual insights report. Farmers will receive a report showing a farm's risks and opportunities, and each farmer with milk vat monitoring systems will receive key milk efficiency metrics. From there, DairyNZ can help improve your efficiency. Check out page 16.

It has been a busy time on-farm, with the return of a Covid-19 lockdown on top of calving and staff shortages. We're well aware of the staffing challenges you're facing, and the frustrations from not only reduced access to international staff but in retaining the people we have.

We want the pause in residency applications kick-started again, as we are losing experienced staff to Australia and Canada. We know many of you are frustrated by the delays with MIQ space and the border exception process as a whole. Alongside Federated Farmers, we're committed to challenging the government on these important issues.

Meantime, it's important we look after all the people we have – acknowledge their great work on-farm and the value they bring to our sector.

Finally, it is also time to cast your votes for DairyNZ's Board of Director elections. These are open until October 19. You should have received your electronic voting pack; if not, please visit **dairynz.co.nz/agm** to request one.

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

· ·

Regards,

Tim MackleChief executive





Features

06

Three, two, done Milking three times in two days has resulted in a better workplace and improved herd reproduction for Stratford farmers Daryl and Karyn Johnson (pictured on the cover with staff Rebecca Sturgeon and Michael Webby).



18

Recipe for succession

Mac and Lynda Pacey's commitment to paying down debt and getting good advice has put them in a strong position to help son Mark into the business.



ISSN 1179-4909

DN703-223

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

CONTENTS



In this issue

- **3** Working better to support you
- 4 Snapped on-farm
- 13 No going back
- 14 Flexible milking FAQs
- **16** Saving time in the dairy
- 17 Vote now for your DairyNZ director

Regulars

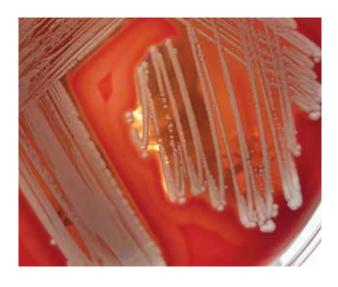
- **2** Take 5
- 21 Just Quickly
- 27 Regional focus
- 28 Regional updates
- 29 DairyNZ contact list

Staph. aureus mastitis? Don't panic
When it comes to managing Staphylococcus
aureus, culling should be the last tool out of
the toolbox.



Making milking times work for you

What are the options for milking frequencies and intervals, and how do they compare? And how does 3-in-2 milking affect your sleep?







We appreciate your feedback

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



TAKE 5 Tips for farmers

Talk to others

If you're struggling to cope with stress, that's when it's good to talk to others. Surround yourself with people who are upbeat, pragmatic and able to give you a different perspective. More wellbeing tips at farmstrong.co.nz



Bank balance check

This is the time of year when your overdraft may be tight. Take a moment to check if you're on track to stay within your limits. If you foresee any problems, a quick call to your bank manager now may prevent stress and save time later.



Front-footing lameness

Early identification and effective treatment gives a lame cow the best chance to get back on track. Use our Healthy Hoof app to take the hassle out of lameness scoring and treatment recording - dairynz.co.nz/ healthyhoofapp

Pasture Summit don't miss it

Register now for the Pasture Summit Field Days supported by DairyNZ. Choose from two events: Hawera (Nov 30) and Wyndham (Dec 7). More details at pasturesummit.co.nz





Working better to support you



Farmers have spoken and we've listened. Here's how we're adapting to meet your needs. To ensure DairyNZ is responding well to the shifting needs of farmers, we hit the provinces and got on the phones to ask about your biggest challenges, what's important to you, and how we can best support you.

What you told us



You want practical options, especially help with environmental regulation.



You value researching new ways to farm to ensure farming is sustainable and profitable.



You want support with retaining, growing, and recruiting staff.



You want DairyNZ to understand you and your business better.



You want the dairy story told well to the public.



What we're doing differently



Organising our activities into the five topics on the left – these will be our key focus areas. Find out more about this at dairynz.co.nz/dairynz-strategy



Proactively contacting farmers, understanding your needs, and providing solutions with a focus on environment and profitability.



Working closely with groups of farmers that have common needs, e.g. those early in their careers, Māori levy-payers, catchment groups, etc.



Allocating staff to support larger levy-payers and farmers active in wider networks.



Sharpening our advocacy in the regions – taking the initiative with regional councils and our partners to reduce duplication and have greater impact.



Broadening our range of events to be less generalist and more topic-focused.



Engaging with farmers who attend discussion groups to agree how to streamline and repurpose these.



Giving you better access to information through online nationwide events and more regular local online interaction.



Improving our website content to make it easier to find what you need and put it into action.



Taking a fresh approach to improving public perception of dairying through a new 'Building Trust and Pride' campaign.

The best finding

Farmers love farming. Not every bit of it and not all the time, but few of you would trade it. You value the autonomy, the challenge, being outside, the environment it provides to bring up your families, and your connection to local community. And DairyNZ is committed to helping this continue.



Snapped on-farm

Here are some of our favourite photos from social media over the past few months, showing what's been going down on farms around the country. If you'd like your photo to feature, share your snaps by tagging us on social media or using the #dairynz hashtag.





Photographer: Sydney Porter, farm manager in Hawera, South Taranaki @lifeofadairyfarmer

"This is me while I was trying to film a short video of myself for the NZ Dairy Industry Awards. I love dairy farming and the connections I've made with other like-minded people. I love being a part of the positive change of how others perceive dairy farming, and the rewards of working hard are physically noticeable in positive animal health and production."





Photographer: Francesca Bennett, sharemilker in Morrinsville, north Waikato @_francesca_bennett_

"This is my daughter Fearne, who's just turned one. We milk 280 autumn-calving cows. Fearne is out with me every day (her older brother Harrison is three and he's there most days too). We'd just finished drenching the calves, so I let her out of the backpack to wander around in her new gumboots but she's still getting used to walking in them so mostly was just falling over, lol."



Photographer: Chloe Payne, 2IC in Little Wanganui, West Coast

@cowsofnewzealand

"The first photo is Feijoa at a month old, and the second is her now at two years old. It feels like Feijoa was just born, but she had her first calf in early August and is settling in well to the milking herd."





aryl and Karyn Johnson are heading into their third full season of milking three times every two days (3-in-2), at hours they've fine-tuned over the past two seasons.

They employ two full-time staff on their 460-cow, 160ha property near Stratford. Like farmers everywhere, they've been increasingly conscious of the need to keep their good staff and make the operation as "people-friendly" as possible.

"Young people today are seeking a worklife balance. They're not prepared to go sunrise to sunset with few breaks and little time off, like it was for us," says Daryl.

The couple had used the 3-in-2 routine for the second half of lactation for three years, before going full-season two years ago.

"We really enjoyed the part-season. For us, it was less risk than going once-a-day, with the possibility of losing production, and impact upon our bulk somatic cell count (SCC)," says Daryl.

Seeking solutions

The Johnsons were motivated to use 3-in-2 for the second half of the season to give their staff, Michael Webby and Rebecca Sturgeon, more flexibility over the summerautumn period. However, the move to full season was prompted by rising concerns over their herd's health and performance.

"The main problem we wanted to address was the herd's not-in-calf rate, which had climbed to 20% and just was not sustainable," says Daryl.

"Heifers were losing over 100kg in bodyweight post-calving, and lameness was an issue given the up and down nature of the farm and walking distance." Running a tight System 2 operation, they were loath to have to increase costs by bringing in more supplement over spring or having to use CIDRs to deal with cycling issues.

"We'd come through a period of farm expansion successfully by keeping costs tight. That's got us through most challenges, and we did not want to change that," says Karyn.

"To us, 3-in-2 would minimise a financial cost. We were also conscious our staff had been working long hours over spring, and we didn't feel that was sustainable either."

Healthier herd

Shifting to a flexible milking routine delivered on their hoped-for improvement in herd repro performance, with a major drop in not-in-calf rates, from 20% to 13%. They attribute that to the 25% less walking, resulting in the cows conserving more energy.

Daryl estimates the herd, on average, held onto 0.4 of a body condition score, which they'd normally have lost over that stressful calving-mating period.

"And lameness really reduced," says Karyn. "Our farm has a lot of hills and the pressure on cows' feet, especially over spring, is always an issue. That really fell away."





TOP Daryl and Karyn say 3-in-2 has allowed them some spontaneity to treat staff Michael Webby (far left) and Rebecca Sturgeon (far right) to an occasional cuppa and doughnut, pie on a Friday, or lunch at the local pub. **BOTTOM** Senior farm assistant Rebecca, who's in charge when the Johnsons take a break.



The science behind 3-in-2

Daryl and Karyn were part of DairyNZ's Flexible Milking Project, co-funded by the Sustainable Farming Fund, which monitored six farms using 3-in-2 milking schedules in 2020/21. The research project provided a forum for the group, comprising farmers spread across the country, to discuss aspects of the routine and effects upon farm, staff, and personal lives. A key part of this was for DairyNZ to learn from farmers to develop our resources, such as FAQs.

dairynz.co.nz/3in2

"We were also conscious our staff had been working long hours, and we didn't feel that was sustainable either."

SCC did not increase, and Daryl's fear of more spring mastitis proved unfounded. The average bulk SCC for the herd has in fact dropped from its longer-term average of only 125,000 to an even more comfortable 110,000.

Mixing up the routine

When Daryl and Karyn first started using 3-in-2, their initial routine was a 5am milking and 4.30pm milking on day one, then a 10am milking on day two.

The team enjoyed the change from the usual grinding springtime routine, having the chance for a sleep-in on day two, with calves fed and cows and calves drafted and collected prior to the 10am milking.

"You just had to get your head around the shift in routine. But on that second day, you have the time to tend to jobs – you don't find yourself having to drop everything for that afternoon milking," says Daryl.

They've shifted the afternoon milking time over the past two seasons, from a 4.30pm start in year one to 4pm last season. It'll be brought forward again to 3pm this year (10-19-19 interval), making it a more family-friendly finish time for one staff member.

Refining the system

Karyn says, when they committed to the routine two years ago, she fully expected they'd produce less over their peak but have no production slide after Christmas.

"But in year one we experienced a drop in production at the peak that continued beyond Christmas."

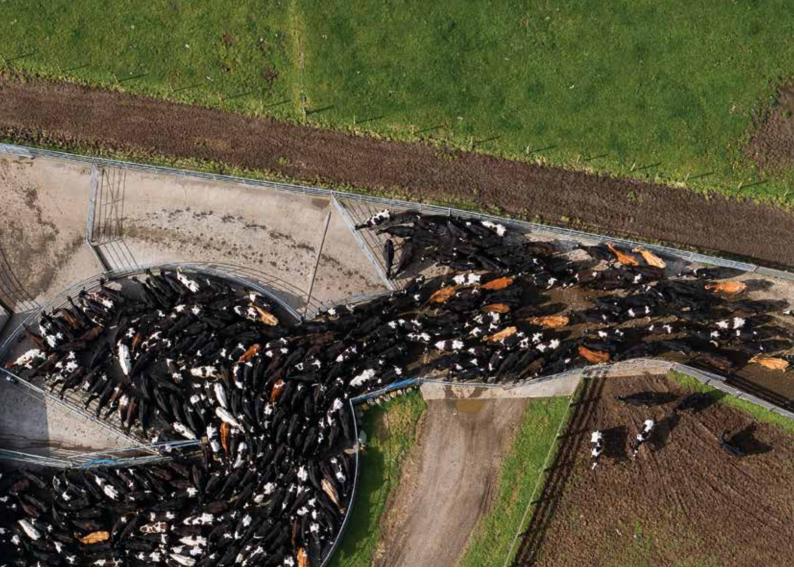
Production fell to 162,000kg MS, against the farm's longer-term average on twice-a-day milking of 176,500kg MS, and Karyn puts this down to how they were allocating paddocks (and they were also milking 5.4% fewer cows).

"In that first year, we were just working on current paddock size for feed allocation.

"The herd ended up short on the longer gap between milkings, our round ran too slow, and it also impacted on the quality of feed. In addition, we tended to keep making more hay than silage, with the paddocks out of the round for longer later in the season as a result."

In year two, they took a step back and reset their grazing rotation, working on a revamped spring rotation planner to calculate what the cows needed hourly, rather than daily.







TOP Less time walking to the shed and standing on concrete means lameness in the herd has fallen by 60%.

Farm Facts

Karyn and Daryl Johnson

Structure: Owner-operators Location: Stratford, Taranaki

Herd size: 460 cows Farm Size: 160ha

Production: 398kg MS/cow

Milking regime: Full season 3-in-2



"It turned out the herd needed more feed in that 19-hour gap than they were getting. Suddenly, we found the system worked better for us and the herd," says Karyn.

"With multiple paddock sizes, it was almost impossible to allocate the correct amount of feed required in a single paddock. So, we worked on incorporating more paddocks, or parts thereof, to meet the feed requirement.

"Making more pit and baled silage instead of hay meant we had paddocks back in the rotation quicker, with better quality grass in the late summer period."

The rotation adjustment led to the farm's second-highest production result last season: 183,000kg MS. This even surpassed Karyn's initial ambitious goal of 180,000kg MS.

Unfortunately, the solid reduction in the herd's not-in-calf rate achieved in year one wasn't repeated last season, pushing back up to 17%.

"We've tried to determine why but do know many herds in this district experienced a lift in not-in-calf rate last season, and it may have come down to poorer-quality feed over spring," says Karyn.

However, they've managed to lift and hold the herd's 6-week in-calf rate, now at 66%, compared to 52% in the 2018/19 season.

"This represents another 30 to 40 cows in calf early, which is significant for us," says Karyn.

The couple have also seen major farm costs savings.

"Fuel and power are down \$5000 each; animal health is down \$10,000. We used 140t less meal with the herd being in the shed less often. By year two, our overall costs were \$2.82kg MS (excluding wages) or \$3.39 including wages, an overall 5% decrease to our twice-a-day system FWE.

"As a couple, we've always looked to improve how we farm."



Repro results

	2018/19		2019	2019/20		0/21
	Johnsons (TAD)	District average	Johnsons (3-in-2)	District average	Johnsons (3-in-2)	District average
6-week in-calf rate	52	70	62	69	66	69
Not-in-calf rate	20	14	13	15	17	16

Why are farmers adopting 3-in-2?

Interviews with farmers using flexible milking approaches identified these as the key reasons for going to 3-in-2.



People

Staff attraction and retention Better work hours More flexibility



Animals

Body condition Lameness Cow health



Lifestyle

Flexibility Family time Wellbeing



Daryl and Karyn's goal to make their operation as "people friendly" as possible appears to be working: farm assistant Michael has been on the team for nearly six years, and Rebecca for seven years.

Ticking the boxes

Despite the change in routine, the Johnsons haven't downsized their team. The two staff members had some initial concerns about 3-in-2 but are now completely on board with the system: it frees up time, making life more flexible both on and off the farm.

Both staff have reduced their hours by 12 hours/fortnight, down to 43 and 46 hours, respectively.

For Karyn and Daryl, there's more time to pursue off-farm interests, including overseas travel (prior to Covid-19). The change has helped them hit the 'refresh' button later in their farming careers.

"As a couple, we've always looked to improve how we farm," says Daryl.

"With overseas markets looking hard at farm animal welfare, people and the environment, 3-in-2 has helped us feel empowered about the changes expected. It's really ticked all the boxes."

No going bag

Flexible milking is profiting humans and animals on this Taranaki farm.

James and Ashleigh Oakes have become enthusiastic converts to milking three times in two days (3-in-2).

The couple, who farm 320 cows on 135ha at Midhirst, have just completed their first full season of 3-in-2.

"I'd been following the DairyNZ research on flexible milking, talked about it at a discussion group, and gone over it so often with Ashleigh that she finally said, 'Just do it'," says James.

It took a bit of trial and error to make the milking intervals work for their herd manager Tony Smith and weekend milker Ali Mattock. They've settled on 5.30am, 4.30pm and 11am (11-18.5-18.5 interval), which works well for everyone.

"We want to be good employers who look after their staff," says James.

They now milk 400 times/year versus 600 times on twice-a-day, over 300 days. They've reduced labour by 800 hours and their two staff members' individual workload over spring peaked at 45 hours/week.

James says, when they first moved to 3-in-2, farm production dropped by 12,700kg MS (9.1%) although they also reduced cow numbers from 350 to 320. At a \$7.60 milk price that's worth \$96,500 but they've decreased costs by \$86,000: reducing imported feed from 312t to 110t, and shed costs (power, rubberwear, detergent, teat spray etc.) by \$50 per milking.

"So, the difference is only \$10,500, which we definitely get back with improved human and animal health and welfare.

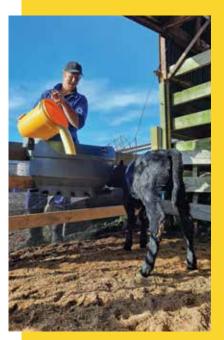
"Cow condition is better, lameness has reduced, and we have an 88% six-week in-calf rate – a 10% improvement.

"We plan to get back to 139,500kg MS within two seasons as a result of the gains made from 3-in-2 – just more profitable.

"It's a change in mindset but once you've given it a try, there's no going back," says James.



Spending more time with their children was a big motivator for James and Ashleigh Oakes to try flexible milking. Pictured with their dad are daughter Emersyn (18 months) and well-mulletted sons Ziggy (5), Payton (7) and Henry (9).



RESULTS OF MOVING TO 3-IN-2

200 fewer milkings/year

800 fewer labour hours worked

hours/week peak workload in spring

\$715/ha — \$637/ha = \$78/ha drop in drop in drop in revenue costs profit

BETTER COW CONDITION, better six-week in-calf rate, less lameness.

Flexible milking FAQs

Farmers who've been using flexible milking approaches helped us answer some of the most common queries.



How do I manage staff time and rosters when milking 3-in-2?

There isn't a one-size-fits-all approach for this, but here are a couple of examples from farmers who've implemented 3-in-2.

Angela's roster

Days	Team 1	Team 2	Number of milkings
Monday	ON (mid)	ON	1
Tuesday	ON (early)	ON (late)	2
Wednesday	ON	ON (mid)	1
Thursday	ON (late)	ON (early)	2
Friday	ON	ON (mid)	1
Saturday	ON (double)	OFF	2
Sunday	ON (mid)	OFF	1
Monday	ON (double)	OFF	2
Tuesday	ON	ON (mid)	1
Wednesday	ON (late)	ON (early)	2
Thursday	ON (mid)	ON	1
Friday	OFF	ON (double)	2
Saturday	OFF	ON (mid)	1
Sunday	OFF	ON (double)	2

Early = morning milking with an earlier finish Late = late start and doing afternoon milking Double = both milkings that day Mid = Milking on OAD day ON = rostered on but that team is not required to milk that day (see table to the right)

Angela Reid (Southland, 1250 cows, 6 staff)

Angela runs two teams of three people, with each team milking once per day and working 11 days on, three days off. The aim of her 11-3 roster is for staff to have consistent eighthour working days. She has extra staff for when the workload is higher (e.g. calf rearers).

Angela's day structure

	ON (early)	ON (late)	On (double)	ON (mid)	ON
4am	***************************************				
	Herding & milking		Herding & milking		
8am	Breakfast		Breakfast		
9am	Dicarrase		Breakiast		
10am		Jobs	Jobs	Herding &	
	Jobs			milking	Jobs
12pm			Lunch		
1pm		Lunch	Larren	Lunch	Lunch
2pm		Editeii			
Zpiii				Jobs	Jobs
		Herding &	Herding &	Zaot	2002
		milking	milking		
5pm		,	3		
6pm	8 hours	8 hours	10 hours	8 hours	8 hours

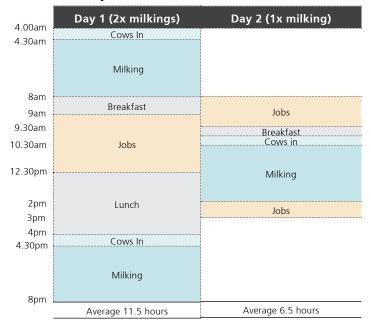
Ben Wilson (Kirwee, 710 cows, 4 staff)

Ben runs a 7-2, 7-2, 7-3 roster year-round, which has stayed the same between TAD and 3-in-2 milking. The team use alternating long and short days when milking 3-in-2. This means they can get more jobs done on the two-milking day, allowing for a shorter day on the one-milking day, where the aim is to do only the basics unless something urgent comes up.

Ben says it's still important to give the team a long lunch break on the longer days, so they get a rest before returning for afternoon/evening milking.

Note: for smaller owner-operator herds with no staff, flexible milking allows owners and their families to maximise time away from the farm at a lower cost to the business by maximising the structure of their milking. For example, you could get away for an overnight trip (about 36 hours) while only needing one milking to be covered by a relief milker.

Ben's day structure







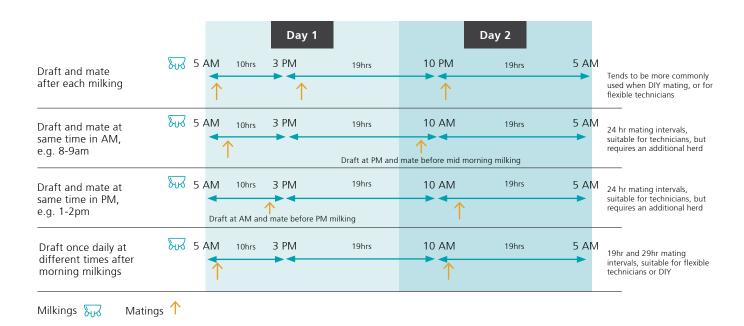
How do I manage the mating period when milking 3-in-2?

Several farmers who've been using full-season 3-in-2 for multiple years have given us their mating plans – see below. Please note that these are working examples. When creating your own plans, be sure to consider:

- interval between matings
- interval between standing heat and mating

 technician vs DIY – work with your technician or provider to come up with a plan that works for everyone, including the cows.

Under all the scenarios below, the farmers found their results to be similar, if not better than when they used a standard milking and mating system. Depending on the system you choose for your farm, and your previous experience and results, your results may differ.



Other FAQs include:

- How do I manage grazing with 3-in-2 milking?
- How do I choose which milking interval to use?
- How do I manage SCC and tanker scheduling?
- How should I treat mastitis when 3-in-2 milking?

Find the answers to these questions questions and more at dairynz.co.nz/going-flexible

Saving time in the dairy

A new report from Fonterra is giving farmers insight into their milking efficiency.

Improving milking efficiency has been a popular topic over the last few years, particularly among farmers with larger herds. Interest has only grown since Covid-19 has put pressures on access to labour.

For Fonterra farmers, the recent rollout of milk vat monitoring systems has provided an opportunity to explore milking efficiency in more detail at an individual farm level.

For the 6000 farms that had monitoring installed before their month of peak production for the 2020/21 season, there was considerable variation in efficiency between farms (see figure below). Milking was defined as the time from the start to the end of milk flow into the vat, so excludes variation in efficiency between farms in time spent herding and cleaning.

Using this data, DairyNZ and Fonterra estimated the time that could be saved for each farm based on using a maximum milking time (MaxT -

dairynz.co.nz/maxt). Here's what we found:

- the average farm could save one hour/
- 28% could save more than 30 min/day
- 44% could save more than 60 min/day
- only 6% of rotaries are reaching 80% of their potential
- only 15% of herringbones are reaching 80% of their potential.

If you're a Fonterra supplier who had milk vat monitoring installed prior to your peak month, you'd have received your insights report in September. This showed details of your milking efficiency metrics, such as cows per hour, litres per cluster per hour, and benchmarking across relevant groups and the country. Importantly, the report highlighted the potential time savings achievable specifically for your farm.

The number of cows milked per hour is a simple benchmark that's easy to relate to. However, it can be influenced by numerous factors, such as production

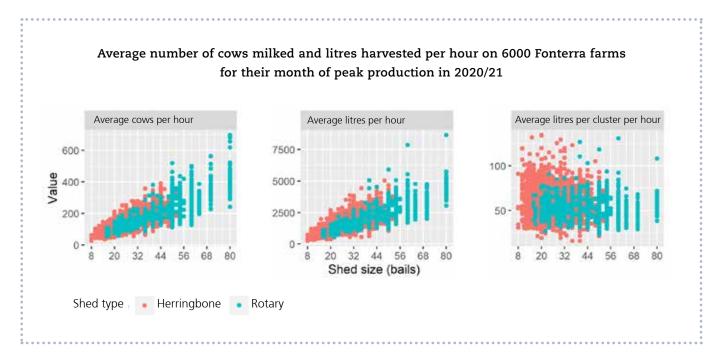
level (higher-producing cows will take longer to milk, and therefore, you could expect a lower number of cows per hour), which is where the benchmark of litres harvested per cluster per hour comes in. While it's harder to visualise, it can be used to compare all batch milking dairies fairly, irrespective of size or type, and shows the high level of efficiency being achieved in some of the smaller herringbones.

Improving your efficiency

In addition to MaxT, there are many other low-cost options to improve efficiency, including adjusting pulsation ratio, liner selection, cluster attachment techniques, backing gate management, technology use and dairy design.

Get practical advice at:

- dairynz.co.nz/efficient-milking
- dairynz.co.nz/ID-Oct-2020
- dairynz.co.nz/milking-duration





Vote now for your DairyNZ director

Your vote could make the difference, so don't miss having your say on who will represent you.



As a levy-paying farmer, you're invited to vote by October 19 for your preferred candidate in this year's Board of Directors election. The elected member will play a key role in supporting DairyNZ's governance and leadership. Hear from the two farmer candidates below.

Stu Muir

"The rural community needs to speak with a unified voice. Government regulations, and water, animal welfare and labour challenges need to be addressed.



"I offer genuine farmer representation. From working my way to farm ownership, I understand the challenges of farming businesses, and the missed opportunities of having the wrong people in key positions.

"A former Associate Director at DairyNZ, I see opportunities at Board and industry level but feel DairyNZ has lost touch with its rural base. As comfortable speaking in the boardroom as the marae, I have a track record working with a range of stakeholders across the industry."

Jacqueline Rowarth

"DairyNZ's role in working for farmers is broad – from science, through extension and education, to policy and advocacy. To add value, the Board must be able to debate the issues with rigour.



"I have 40 years of research, teaching and explaining farming and food production, including management, leadership and governance. My cross-disciplinary knowledge integrates agribusiness with environmental agricultural science and farming. This enables me to ground-truth a good story against a real one.

"I endorse a vision for financially viable, environmentally sustainable businesses attracting the next generation. It will take work. I can help DairyNZ achieve what we need."

To learn more about the candidates, go to dairynz.co.nz/agm

> HOW TO VOTE

All levy-payers should have received an email with your voting password and pin, and information about the candidates. If you have queries or haven't received an email, please contact the election helpline on 0800 666 935.

> JOIN US AT OUR AGM

Farmers are invited to attend our upcoming Annual General Meeting to hear about DairyNZ's highlights over the past year, our key research projects and investments, future priorities, and to vote on resolutions. The successful Board candidate will also be announced at the meeting.

When: Wednesday, October 20. Refreshments will be available from 6pm and the AGM starts at 6.30pm.

Where: TSB Hub, Camberwell Road, Hawera.

Considering the recent COVID-19 Delta variant outbreak, we will make arrangements to provide in-person and online viewing options.

DIRECTORS' REMUNERATION COMMITTEE

DairyNZ also invited nominations for one vacancy on the Directors' Remuneration Committee, which reviews directors' payments. We received one nomination, and therefore, Jo Burton of Paeroa has been elected unopposed.

Recipe for succession

Some good habits learned early on have put Mac and Lynda Pacey in a strong position to help their son step into the business.

Mac Pacey always intended to milk until he was 60, but leukaemia scuppered that plan three years shy of his target.

"I was diagnosed when I was 57. I had chemo, then spent six weeks in hospital getting over a bug, and it wiped out the whole of spring," says Mac, now 68.

At the time, Mac and Lynda's son Mark was a 25% sharemilker on their Bay of Plenty farm, after coming home from the UK a few years earlier.

The plan was for Mark and wife Adelle to move into the family business – but that was accelerated.

"While I was in hospital, Mark had to employ staff, and when I came home, I didn't really go back. Mark had staff and carried on," says Mac.

Strong foundation

Mac and Lynda moved to their farm on the shores of Rerewhakaaitu Lake, southeast of Rotorua, 40 years ago. With young children Mark and Vicki in tow, they started with 53ha and later picked up 63ha "over the back" to take the farm up to 116ha, milking 320 cows through a 24-aside herringbone.

Early in his career, Mac gleaned some formative advice from agribusiness accountant Pita Alexander.

"I remember him saying: 'Paying off your loan is one of the best investments you can make'. Well, we took that on board from a very early age," says Mac.

"We've always paid off debt right through, and we've invested in KiwiSaver and shares along the way."



Succession planning for the Paceys involves the entire family (left to right): Adelle and Elsie, Mac, Mark (son-in-law), Lynda, Vicki and Mark (son), with Tamsin and Noah in the front.

Mac also acted on Pita's recommendation to form a strong support team – and listen to them.

"We have an excellent farm consultant, wonderful accountant, and extremely helpful solicitor. I believe wholeheartedly that having those three in place is the reason we're here today."

By "here today", Mac is referring to owning their farm and house, and their bach at Ohope Beach, mortgage-free.

Smooth transition

Mark and Adelle's involvement in the farm progressed when they went 51%/49% sharemilking in 2014, and started leasing the property in 2020.

Then, in June this year, they bought shares in the farm business, Tulachard Ltd, which owns the 116ha and other assets, including a house, farm buildings, and a lifestyle block with another house.

To get that process underway, agribusiness consultant James Allen met with the three families (including daughter Vicki and her husband) to find out where they wanted to go and what



"I'm a great believer in saving. And if you can't save, pay off debt – it's the same thing."

— Mac Pacey —



Although Mac still loves being on the farm, it's son Mark who calls the shots these days.

help they wanted.

"We've all got our print-out of that," says Mac. "We've always had family meetings and we'll have more family meetings in future. Whenever we make decisions, everyone's involved and considered in the outcomes."

Mac says the family decided, with advice from James, their solicitor, and their accountant, that Mark and Adelle would buy 25% of the business.

"We had to work out a share value, and we came up with a system where they'd buy it in four increments," explains Mac.

The plan is for Mark and Adelle to increase their shareholding in Tulachard Ltd.

"We were all thinking that, in five years, Mark and Adelle may buy another 25% of the business, but it's all dependent on how well they are paying off their debt," says Mac.

James Allen says a key point is that the Paceys' farm business has performed highly from a financial perspective.

"Without this, there wouldn't have been the opportunity to

create a succession plan," says James. "That's because the funds would not have been available to repay debt, build financial resilience in the farm operation, and ultimately, create the financial flexibility needed to build a succession plan."

Still farming

Mac says he's learned to "get out of the way" and let Mark run the farm, but he and Lynda still feed the calves each spring and do other jobs like planting trees and "banging in the odd post".

And although they're getting more involved in off-farm activities, like outdoor bowls and Lions Club in Reporoa, farming remains their first love.

"People say, at our age, we should be planning on making a move and getting settled somewhere, but we don't think we'll do that. We'll wait here as long as we can. I can still do stuff here," says Mac.

"When we sit down and think about it, we've ended up in a wonderful position.

"We're very happy and we have lots of options."

Staph. aureus mastitis? Don't panic



Doing the basics right will stop Staphylococcus aureus becoming a drama in your herd, explains DairyNZ's Jane Lacy-Hulbert.

There are reports that large numbers of cows are being culled in some herds following detection of Staph. aureus. But in many herds, small numbers of infected cows are tolerated. Culling is expensive and, while necessary for some cows, it should be seen as a tool of last resort.

How common is it?

Most herds have a handful of cows with a Staph. aureus infection. Recent studies found this was true for 85% of herds in New Zealand, with fewer than 10% of cows in each herd infected when sampled at dry-off.

Many of these cows will show only subclinical signs. Some will show clots and require antibiotic treatment. Typically, less than half of clinical cases in a herd will be due to Staph. aureus.

In rare cases, a more severe form of mastitis called 'black mastitis' can occur, but for most cows, the impact of Staph. aureus is benign and culling is not immediately required.

How does it spread?

Staph. aureus can spread at milking time, when teats contact contaminated milk in the teat cup liners. Bacteria become lodged on the teat skin's surface, especially if the surface is rough or cracked, or if there are teat-end sores.

The rate of spread is low: one study found one infected cow would infect less than one other cow during a lactation.

With good milking practices, such as regular teat spraying and a well-maintained milking machine, spread of new infections is low.

What's the best way to deal with it?

The best time to cure a Staph. aureus infection is during the dry period, when treatment with long-acting dry cow antibiotics should cure 65% to 70% of cases. Most cows deserve the opportunity to cure during a dry period.

Other tools are available – see box to the right. To prevent Staph. aureus becoming a major problem, talk to your vet about which steps are right for your herd.

Steps to manage Staph. aureus

Teat spray every teat after every milking

Healthy teat skin indicates good technique and sufficient emollient.



Avoid damage to teat ends

Faulty pulsation, high vacuum and overmilking (i.e., milking teats with no flow for more than 2 minutes) can lead to teat damage.



Use hygienic practices at milking time

Clean hands or gloves regularly during milking, and especially after stripping mastitis cases. Milk infected cows last to reduce spread of bugs.



Treat responsibly with antibiotics

Treat clinical cases when detected. Treat subclinical cases at dry-off with longacting dry cow products.



Manage cows with chronic problems

Stop milking quarters that don't respond well to treatment. Dry off infected cows early if bulk milk SCC is a problem. Cull cows only after 3+ clinical cases and/or 2 lactations with high SCC.





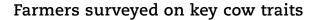
For more information, go to the lactation section at dairynz.co.nz/mastitis

Thank you, Brian

On a sad note,
Brian Wickham,
our NZAEL
manager was
diagnosed with
cancer in June, and
curative treatment was

ruled out. A mini-conference, held in July to celebrate Brian's contribution to the cattle-breeding world, saw an international team of industry personnel, farmers and scientists share their experiences working with Brian.

We are indebted to Brian for the huge amount of work he's done to advance the rate of genetic gain in New Zealand's dairy cattle. This has helped farmers to improve their profitability.



To better understand which traits farmers find most important when making selection decisions, NZAEL commissioned a comprehensive review of the National Breeding Objective.

Undertaken by agribusiness consultants AbacusBio, the review looked at the type of cow farmers want to milk now and in the future. Cow functionality, especially fertility and udder health, emerged as key traits.

The clear finding is that the breeding worth (BW) index is strongly supported by farmers, and this support will only increase as BW evolves to reflect farmers' priorities.

NZAEL is a wholly owned subsidiary of DairyNZ.



Telling your stories

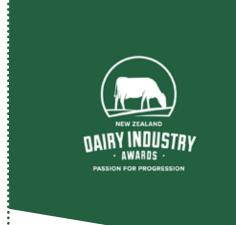
DairyNZ's levy-funded campaign The Vision is Clear has successfully improved perceptions of dairying and engaged the public on freshwater issues. Now, after 2.5 years, it's time to pass on the baton to the next platform for sharing our dairy stories, Here for the Long Game.

Look out for this exciting new campaign, launching in November. We're changing up how we tell the dairy farmer story, with more reach, more versatility, more agility, and more fun. The end goal? To build greater trust and pride in dairy.

Find out more in our next edition of Inside Dairy.



HERE FOR THE LONG GAME



Accelerate your dairy career

Keen to fast-track your career and build life-long networks in the dairy sector?

Entries for the New Zealand Dairy Industry Awards (NZDIA) are open from October 1.

Supported by DairyNZ, the awards are held in high regard across the sector, so they're a recognised way of improving your future in dairying.

Categories include Sharefarmer of the Year, Dairy Manager of the Year, and Dairy Trainee of the Year, with awards at both a regional and national level.

Go to dairyindustryawards.co.nz





Paul Edwards Senior scientist, DairyNZ

Greater flexibility from adjusting milking frequencies and intervals could play a major role in making dairy farming a more attractive career option. But when it comes to choosing a milking schedule for your farm, what are the options and how do they compare?

For most people on-farm, the timing of milkings determines what the rest of the day looks like. Those timings tend to create the structure for start and end times, and when non-milking jobs can be done.

Historically, milking has been done twice a day (TAD) with a 10-hour/14-hour (10-14) interval, e.g., milking at 5am and 3pm. The desire to knock off by 5pm hasn't changed, so as herd sizes have grown and milking times have extended beyond the traditional two-hour duration, morning milking times have been pushed earlier, even to 3:30am on some farms.

Clearly, these work hours aren't everyone's cup of tea. Dairy farmers have been struggling to recruit

Key points

- · Milking times affect the structure of the working day, and consequently, workplace attractiveness.
- There are many options to tailor workplace flexibility to individual farm teams by changing milking frequency and/or milking intervals.
- Using an attractive milking schedule is possible with little or no production trade-offs.

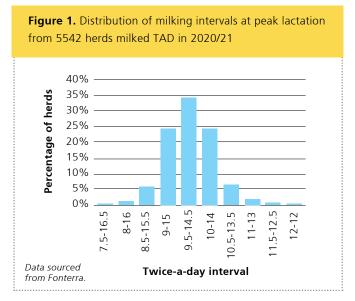
and retain talented staff. The early starts and repetitiveness of milking are two factors that make dairying less attractive than other industries. So, it's not surprising that farmers have become more interested in trying different milking options. The options essentially revolve around two decisions:

- 1) Milking frequency the number of milkings per day, e.g. two (TAD), one (OAD), or one of many combinations in-between, e.g. three times in two days (3-in-2), for 1.5 milkings/day.
- 2) Milking interval the number of hours between each milking.



Evolving milking times

A simple example of how New Zealand dairy farmers have adapted their milking intervals is shown in *Figure 1*, with the departure from the traditional 10-14 TAD interval towards 9-15. This means milking can start one hour later, with obvious benefits to time at home. However, research^{1, 2} from as early as the 1950s showed no production difference between an 8-16 and 12-12 interval, so there's room for even greater flexibility on most TAD farms.





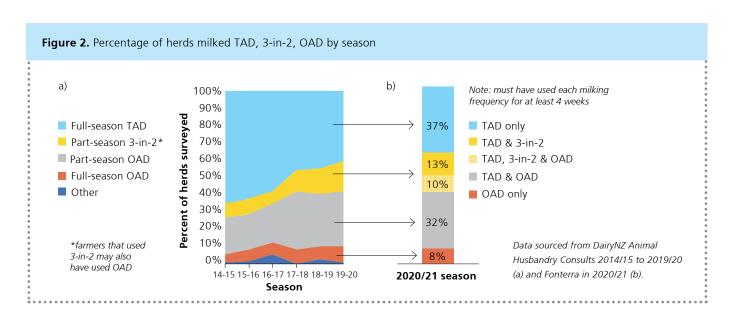
Happier staff and healthier animals -- two common outcomes from adopting flexible milking.

Moving away from twice a day

While adapting a TAD 10-14 interval to 8-16 can improve alignment with people's expectations of work start and end times, it has limited benefits for improving flexibility because milking still happens at the start or end of the day. This is one reason options like 3-in-2 and OAD have become more popular (*Figure 2*), because as well as reducing the total milking time, milkings can occur at non-traditional times of the day. This

opens up options, such as using part-time staff or sharing staff between farms. For owner-operators with smaller farms, it offers the ability to get off-farm for a night while only needing a relief milker for one milking.

In this context, OAD gives the maximum flexibility because milking can occur at any time of day. Three-in-two offers flexibility over TAD, but the choice of milking interval can strongly influence the attractiveness to people working on farm.





Our research found limited differences in production between three different 3-in-2 milking intervals.

Exploring 3-in-2

For the 3-in-2 system, evenly dividing the two days (48 hours) results in 16-16-16 intervals; hence, some people know 3-in-2 as 16-hour milking. Example milking times are 5am, 9pm and 1pm. Generally, these times were seen as unattractive because milkers wouldn't get to bed before midnight. As a result, farmers began adapting the intervals, with 14-16-18 and then 12-18-18 becoming popular.

In a 2019/20 farm system experiment at Lincoln University Research Dairy Farm (LURDF), the 12-18-18 interval (e.g. 5am, 5pm, 11am) was compared to a TAD 10-14 interval at various stages of lactation. A few key results of the experiment were: no effect on fat yield, an 8% decrease in protein yield (3% to 5% decrease in milksolids), and a 6% increase in body condition score for the period milked 3-in-2.

The implications of these results for profitability will depend on the individual farm and its ability to reduce costs. Alternatively, on a commercial farm, using the time made available by fewer milkings to improve management could result in better production results than those achieved in the experiment.

Flexibility in 3-in-2 milking intervals

Depending on the farm size, rosters etc., 12-18-18 can still make for a long day (5am to 5pm, plus milking and herding time). This raised the question: how much flexibility do we have? Is it the number of milkings, or is it the timing of milkings that drives the effect on milk production?

To investigate, we established two six-week experiments at the Ashley Dene Research and Development Station. The first ran from September 11 to October 22, 2020, and the second from January 15 to February 25, 2021. Cows were an average of 34

and 146 days in milk at the start of each experiment. There were three 3-in-2 milking intervals: 12-18-18, 10-19-19, and 8-20-20. All herds were 40 cows and were grazed side by side in the same paddock, separated by an electric fence.

Changing these intervals brings the afternoon and mid-morning milkings earlier. Both changes are likely to be attractive: firstly, to get home earlier; secondly, to have a more relaxing morning on the day with one milking but still get milking completed relatively early, leaving the day open for other tasks.

Statistically, there were no differences in the kilograms of milksolids produced between each of the 3-in-2 herds: 1.93, 1.88 and 1.89kg MS/cow/day in spring, and 1.67, 1.67, 1.64kg MS/cow/day in summer for the 12-18-18, 10-19-19 and 8-20-20 herds.

However, it's possible there were differences that were too small to detect statistically. To investigate, we used data from an additional two control herds (OAD and TAD 10-14) and compared the fat and protein yields for all milking sessions. Some aspects still require further investigation but there was a linear (straight line) relationship between fat yield and hours since the previous milking, i.e. there was no negative effect of a longer milking interval. This was not the case for protein yield, though, where yield declined at longer milking intervals. This aligns with previous research³ and the results of the LURDF farmlet study mentioned earlier.

These relationships, between interval and component yield, can be used to indicate the scale of any underlying differences between 3-in-2 intervals. These estimates are presented in *Table 1*. This approach also allows us to estimate the trade-off from the even 16-16-16 interval, as well as further refinements to the 3-in-2 system, such as milking 10 times weekly (10-in-7).

Milking 10-in-7 changes the fortnightly cycle of 3-in-2 into a weekly pattern by milking OAD on Saturday and Sunday, fitting a seven-day-week business into a weekend-centric society. This is estimated to cost 0.01 to 0.02kg MS/cow/day over the week, relative to 3-in-2.

Table 1. Difference in kg MS/cow/day between 3-in-2 milking intervals*

Interval	12-18-18	10-19-19	8-20-20
16-16-16	0.010	0.025	0.050
12-18-18		0.015	0.039
10-19-19			0.024

^{*} For example, there's a predicted difference of 0.01kg MS/cow/day between 16-16-16 and 12-18-18.

From this regression analysis, we can conclude there are probably small production differences when using more attractive 3-in-2 milking times. However, those differences were too small to detect statistically in the experimental herds, given normal cowto-cow variation.

Therefore, a change in milksolids under more attractive 3-in-2 milkings times, particularly 10-19-19 relative to 16-16-16 or 12-18-18, is unlikely to be noticeable in a commercial farm context, given the daily variation in production due to paddock and climate.

Giving it a go

A growing body of knowledge shows there's a large amount of flexibility when it comes to choosing your milking schedule. Preferences will vary from person to person, so sit down with your farm team and make a plan for milkings that balances your need to get tasks done on-farm with creating a more attractive workplace.

Funding

The two experiments in this article, and the sleep research discussed on the next page, were co-funded by New Zealand dairy farmers through the DairyNZ levy and by the Ministry for Primary Industries through the Sustainable Farming Fund.



With New Zealand's dairy sector facing a major staff shortage, could flexible milking help us to attract new recruits and retain existing talent?

References

- 1. McMeekan, C. P., and P. J. Brumby. 1956. Milk production and interval between milking. Nature 178:799.
- 2. O'Brien, B., J. O'Connell, and W. J. Meaney. 1998. Short-term effect of milking interval on milk production, composition and quality. Milchwissenschaft-Milk Science International 53:123-126.
- 3. Elliott, G. M., F. H. Dodd, and P. J. Brumby. 1960. Variations in the rate of milk secretion in milking intervals of 2-24 hours. Journal of Dairy Research 27:293-308.



How does 3-in-2 affect sleep?

Some people have questioned whether 3-in-2 is disruptive to sleep because of the change in schedule between the day with two milkings and the day with one.

DairyNZ investigated this by giving sleep recording devices to nine staff across three neighbouring farms (part of the same farming group), between July 11 and November 6, 2020. Three staff were on a farm with a 3-in-2 milking schedule from the start of the season; the other six were on two farms with a TAD milking schedule. Note: this was a small pilot study intended as a proof of concept, and the data have not been tested for statistical significance.

We saw little difference in the average hours worked per day, with 10.1 for TAD and 9.9 for 3-in-2, and the proportion of work hours relative to non-work hours (time rostered off and annual leave) was 0.73 (TAD) and 0.74 (3-in-2).

Differences in sleep became apparent from late August, approximately three weeks after the start of calving (*Figure 4*). From this point, on average, people working on the farm with the 3-in-2 milking schedule had 27 minutes more sleep per night. While this difference may not seem large, when individuals are getting low amounts of sleep, any additional sleep is extremely beneficial. In addition, cumulative fatigue can be reduced by getting slightly more sleep each night. This could lead to fewer mistakes and improved farm management.



Support in tough times



Wild winter and spring weather this year has caused significant stock losses and widespread damage to bridges, roads, homes and farms.



On Richard Wright's farms in Canterbury, the June floods took approximately 200ha out of action, with fences wiped out, and silt and shingle left covering paddocks.



DairyNZ's Eoghan O'Sullivan pitches in on Ian Hood's farm, west of Ashburton, to help rebuild fences washed away by the floods.

Assisting farmers to get back on their feet quickly is a priority and DairyNZ regional teams play a part behind the scenes, alongside other agencies, to support the recovery effort.

In any adverse event, the response begins with a network of regional Rural Advisory Groups, which swing into action to support affected farmers. Each group, made up of representatives from rural and primary sector agencies, meets regularly and liaises with local councils and the Civil Defence Emergency Management Group.

North Canterbury Rural Support Trust area representative Leo Fietje says DairyNZ staff bring experience from similar events in the past. In the Canterbury floods they played a collaborative role contacting farmers who needed help, matching them with members of the public offering help.

"They were able to give reassuring advice around the challenges in responding to such events and make quick and accurate judgments of the scale of the need. They hit the ground running to give us an absolute jump-start," says Leo.

Recovery across Canterbury, the West Coast, and more recently Southland and the lower North Island, has been a challenging process for some farmers and their support teams, who have worked tirelessly to get their businesses back up and running as quickly as possible. DairyNZ and other sector stakeholders continue to work closely with impacted farmers, assisting wherever they can.

For practical advice on how to prepare for and cope with adverse events, whether it's drought, flood, snow or volcanic eruption, check out dairynz.co.nz/adverse-events





Northland

Dave and Heather Gray have been farming in the Far North for 14 years and have been part of DairyNZ's budget case studies programme since 2015. Go to dairynz.co.nz/budget-case-studies to find out how the couple managed last season's summer drought and made use of the higher milk price to ensure their business's long-term sustainability.

Waikato

If you're on Facebook, join us on the Waikato DairyNZ closed Facebook group, which has grown to more than 1500 members.

We've had plenty of engaging conversations with farmers through the group, including our popular 'Wednesday Night Live' Zoom call series, which we ran during COVID-19 lockdowns. You can watch these videos and more at your leisure - the content stays on the page after the events.

The group is a closed, safe environment for local discussion about industry, on-farm concerns, or just general updates. We encourage you to post questions and concerns to get conversation flowing. Join now at facebook.com/groups/ waikatodairynz



Bay of Plenty

The Bay of Plenty budget case study farm had a great season, with pasture grown and payout well above average. This low-input farm business, near Edgecumbe, milks on two similar-sized platforms, with a support block providing most of the winter and young stock grazing. Read their season review at dairynz.co.nz/ budget-case-studies

To see what else is happening in your region, go to dairynz.co.nz/events

Taranaki

If you'd like to catch up with our new Taranaki regional leader, Charlie McCaig, he'd love to hear from you.

Charlie joined DairyNZ a year ago after a sharemilking career spent entirely on Taranaki farms. He now lives around the coast in Opunake his wife Jody, and their two boys.

"I'm excited to be leading a fantastic team that's focused on delivering a better future for Taranaki farmers," he says.



"There really is no other province like Taranaki. I've lived and worked in the farming community here for the last 13 years and I wouldn't want to call anywhere else 'home'.

"I'm always up for a yarn about farming, so please feel free to get in touch any time. I look forward to meeting you all out and about in our region."

You can reach Charlie on **0272447915** or **charlie.mccaig@dairynz.co.nz.**For more about Charlie and his team, check out **dairynz.co.nz/co**

Lower North Island

Mark Laurence has recently joined DairyNZ's Lower North Island team as the new regional leader. He takes over from Rob Brazendale, who'll continue in the role of Head of North Island.

Mark, originally from Manawatu and raised in Hawke's Bay, has spent the past two years as the regional leader for DairyNZ in Taranaki. He's excited to be moving back to the Lower North Island, and is looking forward to getting around the region to meet with levy-payers and to reconnect with past acquaintances.

For more on Mark and his team, check out dairynz.co.nz/co. Contact Mark on 0277045562 or mark.laurence@dairynz.co.nz

Southland/ South Otago

The 2021 Pasture Summit field day for Southland has been rescheduled for Tuesday, December 7.

Hosted by Daniel and Emily Woolsey on their farm in Wyndham, this event will feature technical input from dairy sector specialists. This is a great opportunity for sharing ideas and hearing

about developments on achieving profitable food production from grass.

For more information and registration details, visit pasturesummit.co.nz

DairyNZ contacts

North Island - Head: Rob Brazendale 021 683 139

Northland regional leader:	Tareen Ellis	027 499 9021
Waikato North regional leader:	Wilma Foster	021 246 2147
Waikato South regional leader:	Rob Brazendale	021 683 139
Bay of Plenty regional leader:	Rob Brazendale	021 683 139
Taranaki regional leader:	Charlie McCraig	027 244 7915
Lower North Island regional leader:	Mark Laurence	027 704 5562

South Island - Head: Tony Finch 027 706 6183

Top of South Island/West regional leader:	Rachael Russell	027 261 3250
Canterbury/North Otago regional leader:	Rachael Russell	027 261 3250
Southland/South Otago regional leader:	Ollie Knowles	027 226 4420

How our regional teams are changing

To provide more focused support to you (see article on page 3), we have created two field team roles to replace the generalist consulting officer role.

The new roles are extension partner and regional partner. Our extension partners will provide groups of farmers throughout the country with a broader range of more topic-focused events. Our regional partners will connect one-on-one with farmers to identify and link up solutions to help face today's dairying challenges and opportunities.

Look out for an introduction to our extension and regional partners in the next edition.

DairyNZ directors

Jim van der Poel	021 848 484
Elaine Cook	027 223 2049
Colin Glass	027 486 4064
Jacqueline Rowarth	027 694 4334
Peter Schuyt	027 557 4242
Jo Coughlan	021 522 142
Tracy Brown	027 291 1716
Mary-Anne Macleod	021 923 332





with our fat-free, zero-carb, fact-packed podcast.

BRAIN



Dairynz

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

New Zealand Permit No. **174646**

Permit

