

The background of the entire page is a high-speed photograph of a milk splash, showing the liquid in mid-air with various droplets and a soft, white, frothy texture. The lighting is bright and even, highlighting the natural white color of the milk.

THE BULLETIN



GENETIC GAIN

WINTER 2022

Which herds are **CREAMING IT?**

LIC data reveals who's running the
fastest herd improvement race.

The Basic Principles Don't Change, But We Can Turn Them Up!



by Malcolm Ellis, LIC general manager NZ Markets

I will be forever indebted to the much admired and sadly missed Colin Holmes for the manner in which he explained the 'Breeders equation' to me and my Massey Dip Ag colleagues back in the early 1990's.

Anyone who had the pleasure of meeting or being educated by Colin knows that he could explain a principle

better than anyone, and he certainly nailed it that day when he hammered-home the key principles of selection pressure: selection accuracy and generation interval.

Roll forward to 2022 and we're in the era where the quality and efficiency of our dairy cows has never been more important. The good news is we have great tools to sharpen the focus, and really turn up the rate of genetic gain.

Genomic technology, and the associated ability to identify elite bulls at a young age for widespread use, really carves into the generation interval - not to mention the significantly enhanced accuracy of selection.

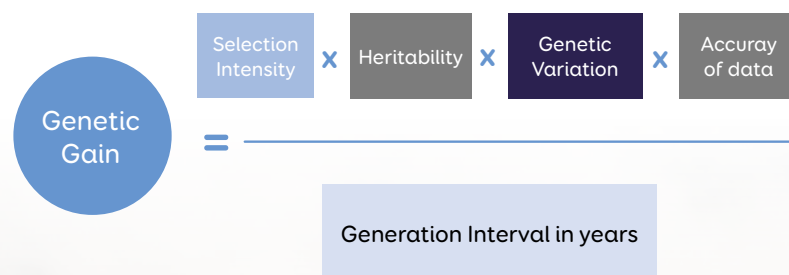
Up and down the country we're supporting farmers with quality data to ensure the responsibility of the next generation is reserved for only the best cows, breeding the herd replacements from the higher-ranked cows, with the balance receiving a beef or SGL alternative. This is selection pressure at work, and sexed semen on that very top-end drives that intent even harder.

I'm absolutely stoked to see that farmers are increasingly taking a keen interest in their rate of genetic gain, and looking to pull the levers to ramp it up.

The content of this publication really captures those key drivers, and is well-illustrated within the fantastic farmer story of Andrew Robb on the West Coast (see pp 4, 5). This is a story of the power of the key components coming together on-farm to really light up the rate of genetic gain.

Enjoy the read and I wish you well as you look to set up for a successful start to the 2022/23 season.

Malcolm Ellis



David Chin LIC chief executive

Hello!

On behalf of the LIC team I am pleased to present the latest edition of The Bulletin - and my first as Chief Executive.

Since I stepped up to the role in January, I have really enjoyed taking a fresh look across the co-op through a different lens and importantly, getting out on-farm to meet more of you, our farmer shareholders.

I've been at LIC since 2006 and held a number of roles over this time which have given me broad knowledge of the co-op, the products and services we offer and a deep appreciation for the value these deliver on-farm.

It's a tremendous privilege to now be Chief Executive. LIC is a great company, with a very good strategy that puts our farmers at the heart of everything we do - and a great team of dedicated people to deliver on that.

It is truly an honour to lead this co-op, particularly in what I see is a really exciting time for herd improvement as a critical part of the solution to helping you maintain milk production with fewer cows, reduce your environmental impact and meet the challenge of being profitable and sustainable.

Because we don't need to be milking more cows - we just need to be milking better cows.

Our latest research shows this goal is well within reach for New Zealand dairy farmers and those that have a sharpened focus on herd improvement are already making great strides in this space. I encourage you to read more about this research on pp2-3, and consider what opportunity this presents for you to improve the production efficiency of your herd - and don't hesitate to reach out to one of our team if you need any help with that.

I hope you enjoy reading this issue of The Bulletin and on behalf of LIC, I wish you all the best for the new season.

David Chin

Chief Executive

About David.

- Started at LIC in 2006
- Previous roles at LIC: GM Operations & Service, Chief Transformation Officer, Territory Manager (Central North Island) Key Account Manager, Marketing Manager and Herd Testing Product Manager
- Grew up in rural Waikato
- Interests include refereeing rugby (19 years on the field), farming, hunting, reading, and spending time with wife Alex and three daughters.

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Average milk solid per cow production across the national dairy herd (DairyNZ industry statistics).

New LIC data puts the spotlight on who's leading the herd improvement race...

CREAMING IT:

Concentrate on breeding the right cows, right here, right now

In this new era of reduced cow numbers and changing environmental and regulatory considerations, it seems more important than ever for farmers to sharpen their focus on herd improvement and look to breed better, more efficient cows.

This article discusses LIC research that reveals some interesting insights about breeding worth and genetic gain; the data identifies a segment of farmers who are making the best strides in the quest for more-profitable, environmentally sound, outcomes.

As part of LIC's commitment to faster genetic gain, its science team recently investigated the full spectrum of MINDA herds in search of the 'best cows', which included whether a clear correlation existed between breeding worth (BW) and production efficiency (in today's typical herd).

The research re-affirmed high BW cows were more efficient milk producers than low BW cows,

and that long-term users of LIC genetics continued to achieve faster rates of genetic gain than other farmers.

Close to 1 million cows, from current MINDA and Herd Tested herds aged between 4-8 years-old, were split into quartiles based on BW: The average (per-cow) milk production, liveweight, and fertility breeding value (BV) from each quartile was calculated.

Results showed a staggering variation in milk production and efficiency between the 'top-quartile' and 'bottom-quartile' of the cows (when split on BW), at 65kg of milksolids, per cow, per season.

The top quartile, high-BW, cows also had a lower liveweight BV, and a better fertility BV, compared to their lower BW herd mates.

David Chin, LIC chief executive said the data showed the progress the dairy industry had made since turning its focus to improving cow quality on-farm.

And there was plenty of opportunity that was still there for the taking, Chin said.

"This data shows that high-producing, climate-friendly cows aren't just a hope for the future. They exist in the national herd today; we simply need more of them.

"If we're going to meet our sector's goals, we must breed more of those highly efficient cows that sit at the top, and fewer that sit at the bottom.

"We've got the tools and the data to show further improvements in production efficiency are well within reach for every dairy farmer - and some herds are already doing it."

Research shows high BW cows:

- ✓ Produce more milksolids;
- ✓ With less liveweight; and
- ✓ Are more fertile

LIC Research reaffirmed high BW cows were more efficient milk producers than low BW cows.

BW Quartile	Animal Count	Avg BW	Avg KGMS	Avg LWGT BV	Avg FERT BV
Q1	216,413	201	502	2	1
Q2	216,413	145	473	5	0
Q3	216,413	103	458	8	0
Q4	216,411	39	437	12	-1

Note the difference between average milksolid output of quartile 1 cows versus quartile 4 cows.

502kgMS - 437kgMS = 65kgMS

Long-term users of LIC genetics are breeding these better cows, faster

The research also took a closer look at the rates of genetic gain that long-term users of LIC genetics were achieving.

To calculate the 'rate of genetic gain', the difference in gBW between one year of replacements versus the following year was compared.

Between 2017 and 2021, LIC 'long-term users' (herds with more than 80% progeny sired by an LIC bull over the last 10 years), had achieved almost double the rate of genetic gain per year, compared to herds with less than 20% progeny sired by an LIC bull (19 gBW vs. 10 gBW).

Chin said the findings confirmed the kind of gains that could be made with a strong focus on herd improvement and consistent use of high-BW bull teams.

"It's really encouraging to see that farmers that have predominantly been using LIC bulls are achieving markedly higher rates of genetic gain in their herds. The bigger jumps in BW between each year of replacements, the faster you're moving towards milking more efficient cows that emit less."

Alongside farmers' herd management decisions, genomics had played a key role in the increases, Chin said.

"It's no coincidence that the increased utilisation of genomics in our breeding programme and increased farmer uptake for young, genomically selected sires has gone hand-in-hand with higher rates of genetic gain in farmers' herds.



David Chin
LIC chief executive

"By drawing on information from a bull's DNA, we're

able to more-accurately identify high genetic merit sires at a young age and make these elite genetics available to farmers to breed from as early as possible."

If the industry's average rate of genetic gain increased to match herds that are long-term users of LIC genetics, it would go a long way to counteract declining cow numbers and overall milk production.

"There are a number of factors influencing a farm's productivity and environmental efficiency, but the contribution made by genetic gain cannot be underestimated," Chin said.

"Our data shows there are already herds in New Zealand that are achieving substantial gains in genetic merit which are delivering noticeable value to these farms in the form of increased production efficiency and improved environmental efficiency.

"The genetics and technology to help farmers breed better cows, faster, is here now and we're proud of the role we play in helping farmers achieve just that."

Contact your Agri Manager for a personalised discussion on how LIC can help you reach your herd improvement goals.

DOING MORE, LASTING LONGER

Andrew Robb on his West Coast Dairy Farm: "I pick out 10 cows a day for Sexed Semen, and that's based on whether they're a good, sound cow..."

During recent years West Coast farmer Andrew Robb has milked up to 925 cows on his 365ha (effective) dairy platform, but he's driven numbers down since, and today is down to about 700 cows.

He says herd production has not been significantly compromised with the lower numbers, but profitability is certainly up, because farm costs have decreased with fewer cows.

And in terms of milksolid output per cow, he's getting plenty more bang-for-buck.

Andrew believes the New Zealand farmer's desire to get more from each cow is set to continue.

"Over time, with better technology and continued use of good genetics, we should be able to have the flexibility to lower our stock numbers further, because our cows are getting better, and there's room for picking cows more accurately."

Why the need to drop numbers?

"My theory is that herd sizes in general are likely to decrease over time, or at least hold, rather than increase - because politically and economically that's what's occurring, and the pressure is there.

"We're (dairy farmers in general)

no longer in a growth phase, so breeding goals have changed, and it's really important to me to get the very best I can out of my genetics - my focus has changed from getting as many (cows) as I can, to utilising the best of what I've got to drive better performance from my existing stock."

Andrew's herd is in the top 5% nationally for Breeding Worth (BW), and, as the breeding goals have evolved, so has his mating strategy:

"For the past two mating seasons we've used 210 straws of (fresh) Sexed Semen during the first three weeks of AB. At the same time I've used the Forward Pack Premier Sires, as well as Stabilizer® as a beef breed option.

"So I pick out 10 cows a day for the Sexed Semen, and that's based on whether they're a good, sound cow; I have a criteria - they've got to be within the top one-third of the herd (based on Breeding Worth and Production Worth), they've got to have recorded a pre-mating heat, and they must have calved for a certain length of time - pretty much they would have calved within the first six weeks."

"I use up my Sexed Semen on the first 10 cows, and the remainder

Andrew Robb's West Coast Farm

- Owned by a company that includes four shareholders, including Andrew who is managing director, and his wife Michelle.
- Located near Greymouth, the farm has been in existence for 20 years.
- 700 cows, KiwiCross-sired herd, predominantly Jersey initially, but now close to a 50/50 breed mix (Holstein-Friesian). Most cows are 450-475kg mature weight; heifers 375-400kg liveweight.
- Herd is in top 5% nationally in terms of Breeding Worth.
- 60-bail rotary shed equipped with Protrack and automatic cup removers.
- Cows fed mainly on pasture, but each get 500 to 800 kg of supplementary feed per year in the shed.

of the really good cows go to Premier Sires... the rest will get a beef straw; Stabilizer® beef genetics promise a low birth weight so that's great for calving... when they get to about 150-180 days they have very vigorous growth, they just take-off. And they're quiet animals, almost quieter than our replacement calves."

After week-three of mating all animals are put to Stabilizer® beef until about week seven, then short gestation length Hereford and Angus is used for about 10 days before the bull is put out.

Having refined his mating approach over the past few years, Andrew is particularly pleased with how his replacement stock is looking.

The R1 average BW is 295, while the R2 average BW is 236.

"That's a result of Sexed Semen use, and influence of selecting from my top BW cows," Andrew says.

"The big leap is the Sexed Semen - I know it looks relatively expensive but we're utilising the value of those calves and it pays for itself; I think more people are starting to realise that.

"My ultimate goal is to put collars on the cows and not to put the bull out at all. I'll probably AI all my heifers too, because of the genomic test that LIC's putting out to test the female's DNA" (see p28).

Andrew says getting genomic information on his female stock is yet another avenue that will further-refine what genetics he puts to Sexed Semen and Forward Pack, and what animals will be kept aside for beef.

Ideally Andrew goes after a high Production Worth and Breeding Worth animal:

"Production (of milksolids) is most important to me obviously, but next in-line is temperament and soundness - I don't need a beauty queen, but I do need a good, solid, body type that I know is going to handle calving and that has good feet and good udders - there's a correlation between some traits and longevity, and that's what I'm after.

"I'm aware of my empty rate, six-week in calf rate, and I know what my ideal levels are; I think I can improve things with technology like collars and genome testing on the cows over the next few seasons, and I'll be moving toward that.

"That means I should be able to lower my replacement rate over time, because I'm trying to breed for longevity, and with the lower numbers they'll be getting fed to their potential, so everything points toward them doing more, and lasting longer."



Andrew Robb says cow production efficiency is important to him: "I don't need a beauty queen, but I do need a good, solid, body type that I know is going to handle calving and that has good feet and good udders..."

Further Refinements to Breeding Worth Index Make for Greater Accuracy



by Rachel Bloxham, LIC herd improvement technical manager

April saw the release of two further enhancements to the national genetic evaluation system, and these changes were replicated in LIC's genomic modeling and released at the same time.

The two enhancements included:

- An improvement to the liveweight breeding value evaluation, and
- The introduction of udder overall to the Breeding Worth (BW) Index.

Liveweight evaluation improvements

Liveweight is an important trait in BW; this, combined with production traits, reflects the production efficiency of cows. Any improvement in the accuracy of this trait will provide more effective selection for production efficiency in the national dairy herd. The main change is that the new evaluation for liveweight no longer uses weight scores from Traits other than Production (TOP) inspections.

Liveweight Breeding Values (BVs) are expressed as a mature (5-7 years-old) liveweight, with the research undertaken by NZAEL identifying that 2-year-old TOP weight scores were not good predictors of mature liveweight BVs. Only electronic-scale weights are now being used (with the exception of walk over weigh scales). For the record to be used in genetic evaluations, it needs to be measured when the cow is:

- in-milk;
- within 4 to 305 days from calving, and;
- aged 2 to 7 years.

For a trait that is so important in understanding the production efficiency of cows in New Zealand, weights are still not well-recorded.

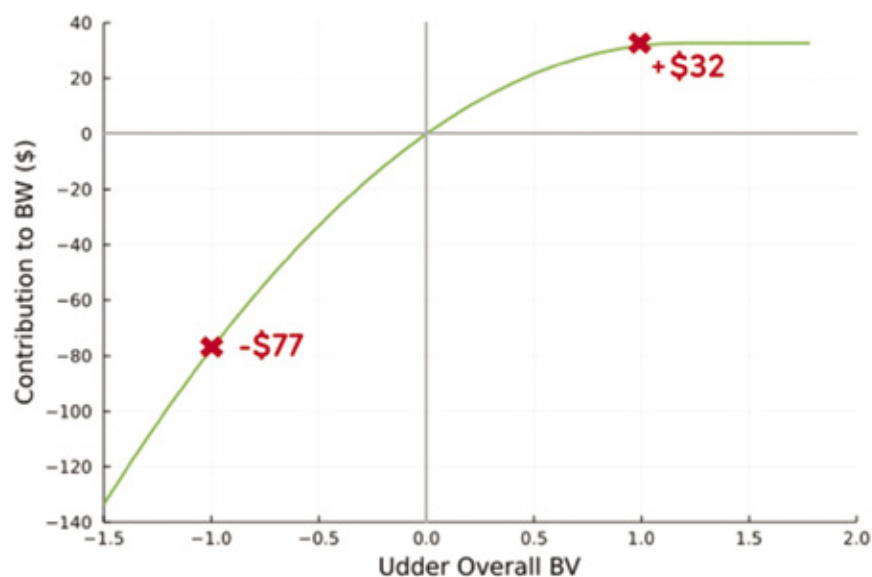
During the 2020-2021 season only 69,167 cows were weighted (Dairy Statistics 2020-2021) - this is less than 2% of the national herd. Most of these are 2-year-olds that are part of LIC and CRV's progeny test programmes. It is strongly encouraged that farmers weigh their milking herd at least once per season to further improve the accuracy of Liveweight evaluations for their herd, which will also help with the accuracy of on-farm breeding and culling decisions.

Udder overall incorporated into BW

The second enhancement is the inclusion of Udder Overall into BW. This will create more genetic progress in traits associated with the quality of the udder, penalising poor udder conformation, and rewarding good udder conformation. Udder conformation is becoming more important as we see more farmers switching to variable milking regimes. There is an expectation that cows will need to contain milk in their udders for longer periods of time than what has historically been the case (i.e. with traditional twice-a-day milking). Udder Overall is an overall assessment combining several TOP udder traits; these being front and rear udder attachment, udder support, front and rear teat placement, and teat length.

All LIC's Sire Proving Scheme animals are TOP inspected as 2-year-olds, and these records contribute to the evaluations of the cooperative's bulls. The economic value being applied to udder overall in the calculation of BW is non-linear. This means that bulls whose daughters have cows with poorer udders will proportionally get penalised more, compared with the economic benefit of those with good udders. This is illustrated in the graphic below, which displays the estimated economic contribution to BW based on the udder overall BV.

NZAEL research has shown there is diminishing returns as UO BV improves and there is effectively no extra economic benefit beyond a BV of +1.2.



by Simon Worth, LIC livestock selection manager

From the Breeding Desk

At this time of the year I would typically be highlighting the celebration that is Breeders Day. Unfortunately, given Covid 19, our usual May celebration did not eventuate - however we are rapt that this prestigious event is now back on the calendar for the end of June. This is a great opportunity to show our respect and appreciation to the breeders of the 2021 Premier Sires teams.

Our breeders are the engine room of LIC genetics, and, as you will read on the following pages, there are again some outstanding highlights from a breeding perspective.

In 2022 you will note an exceptional level of depth and available options across the breeds. There is no doubt that a good number of these bulls are set to make a significant impact on the national herd.

I would like to share my appreciation, and recognise the excellent relationships we have, with the breed associations. These have culminated in a number of joint-venture bulls making the grade through either the Discovery Project (Holstein Friesian New Zealand) or Jersey Future (Jersey New Zealand). The pipeline of young bulls resulting from these schemes is certainly impressive

Over the last few months the industry has again witnessed some outstanding sales of high indexing animals (many with LIC contracts). Without doubt this is cause for celebration for the breeders involved, and reward for years of passion and hard work. Special acknowledgement to Dick and Faye Post (Posterity Jersey Stud) whose \$55,000 sale of a rising three-year-old, sired by 318009 Tironui Superman, created a New Zealand record!

Bulls such as Superman have graduated from LIC's 'rock-solid' Sire Proving Scheme (SPS). The value proposition we see for farmers involved in SPS continues to impress. These farmers gain valuable data through having their two-year-old daughters weighed and assessed for conformation, and the rebate received effectively funds the year's herd testing. Of most value however is their first access to LIC's yearling bulls. These are the most elite and, once again, we witness some outstanding increases in gBW in the latest crop (2022 codes) now domiciled at Newstead:

Although it is the SPS farmers (and those with LIC contract matings) that benefit from access to these yearling bulls, those utilising Forward Pack, Sexed Semen, or A2/A2 through Premier Sires also benefit in the increased rates of genetic gain, albeit one year later

	SPS Team	gBW	Udder Overall	Dairy Conf
Jersey	21 codes	359	0.55	0.55
	22 codes	384	0.53	0.55
KiwiCross	21 codes	366	0.59	0.54
	22 codes	405	0.68	0.57
Holstein Friesian	21 codes	309	0.49	0.46
	22 codes	349	0.58	0.47

All the very best for winter. From the breeding desk we eagerly await spring when the upcoming graduates (19 code bulls) begin to show their wares.

I'm again confident we'll be celebrating!

Tonnes of proof - LIC's Sire Proving Scheme is rock-solid



Udder Overall is a non-linear breeding value, meaning high-scoring bulls will not be over-rewarded, but bulls with low udder BVs will be significantly penalised

Shifting Goalposts, but we're still Slotting the Kicks



by Adrian Young,
LIC senior sire analyst

As I sit in the departures lounge in Auckland airport heading back to Ireland for my first visit home in three years, I'm reflecting on the changes in the world since 2019.

I never expected it to be three years between visits but here we are. The 'new normal' I believe they call it.

In the world of Animal Evaluation there's also a 'new normal'.

Udder Overall is now formally part of the Breeding Worth calculation, and there has been a change in how liveweight is calculated as part of the breeding worth equation (see page 6).

Given these changes, we've seen some re-ranking of bulls, but the sire selection team here are pleased to report most changes have been favourable to the LIC stable.

Let's take a look at a select few LIC bulls in the Holstein-Friesian breed.

118053 Greenwell Governor S1F: He currently sits at number 3 on DairyNZ's *Ranking of Active Sires* (RAS) list, and is bred from the ever-present Greenwell stud of Alan, Anne and Paul Looney of Opotiki.



118053 Greenwell Governor S1F

Governor is included in the Potential Premier Sires Forward Pack and Daughter Proven teams, and he's also available as a nominated sire in the frozen sexed and conventional categories. Don't miss out on your chance to use this bull!

Sitting at \$409 gBW, Governor is a Galatea MGH Regiment S1F son from a Farside M Illustrious dam. With an udder overall gBV of 0.50 and a fertility gBV of 2.6, he offers durable and robust daughters.



Dam of 118076 Meander TT Feature-ET S2F

But that's not all, Governor has a maternal half-brother who will receive his daughter proof this spring. Keep an eye out for Greenwell AB Braze-ET S2F.

118076 Meander TT Feature-ET S2F: Behind this guy is one of the most interesting stories of a bull purchase, before he was proven, and now marketed! From Robert and Annmarie Bruin's stable, this Tregaron Technician S2F son was out of an outstanding daughter of Greenwell FI Blade who only managed one lactation (due to an injury).

But LIC's livestock selection team trusted his genomic evaluations, and this, along with the strength and depth of his cow family, meant Feature was brought on-board.

Eagle-eyed readers of the *LIC Genetics Catalogue* will notice that he's produced a lower number of daughters through the Sire Proving Scheme than is the norm. He's the only bull in recent history that has been 'carried-over' in SPS, and this was due to an injury which affected his ability to create semen.

But how well we've all been paid back for these risks! Feature now boasts an udder overall gBV of 0.87 and a gBW of 325. He is exactly what the Holstein Friesian breed needs and will 'feature' in our sires-of-sons list this year.

Available in the Potential Premier Sires Daughter Proven team, he's also available nominated and frozen sexed which reflects the confidence and belief we have in this bull.



Dam of 118053 Greenwell Governor S1F

Now for some of the young boys:

121011 Lombardi Maverick S3F: This is the udder highlight of the genomic sires right now. Sitting at 321gBW and an amazing udder 0.97gBV is no coincidence.

He's born to an excellent daughter of last year's *Hall of Fame* inductee San-Ray Beamer S2F, with the cow delivering a whopping PW of 623! I was lucky enough to see her this year and I was really impressed.

Maverick is sired by Royson Currency, another TOP standout bull, and was bred in the 'Naki by Ian and Tina Megaw. Maverick's fertility is also at the top of the pile at a sky high 11.6 gBV. He's available via sexed and conventional frozen. Miss out on using this bull at your peril.



120080 Tronnoco M Saquoon-ET S3F

120080 Tronnoco M Saquoon-ET S3F: A *Discovery Project* bull coming from Tony and Kerri O'Connor in Timaru, Saquoon is another great news story.

He's a son of one of the highlight graduates from last spring, Dicksons MH Mason-ET S2F. Production and udder overall are what SAQUOON brings to the party. He possesses a total of 88kgs of protein and fat, and, coupled with an udder overall gBV of 0.83, you'd really be doing yourself a favour by making sure he's part of your mating plans this year. This guy has a gBW of 319, and you'll find him part of LIC's Premier Sires Sexed team, and he's also available in frozen conventional nominated.



by Danie Swart, LIC bull acquisition manager

I travelled throughout Northland, Waikato, and Taranaki between February and April this season and have inspected a large number of contract-mating cows, especially Jersey cows, and naturally I've also had the privilege to walk through a good number of Jersey herds during that time.

In most herds I saw very few cows with below-average udders.

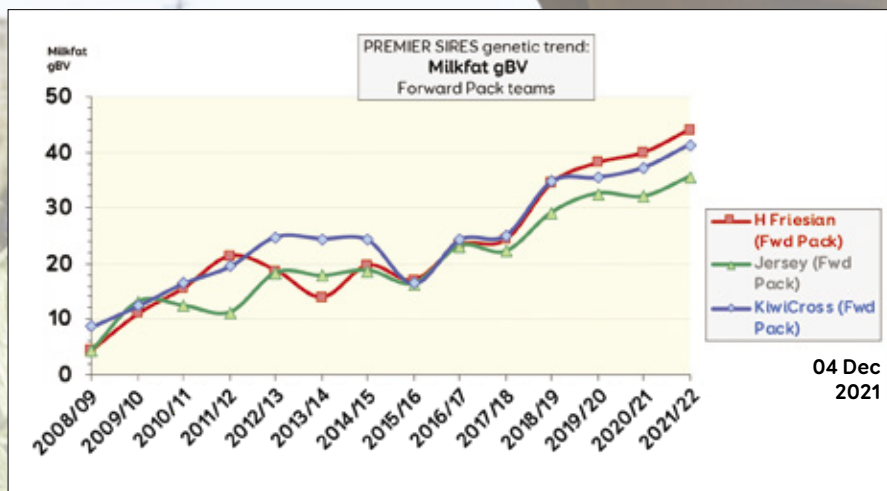
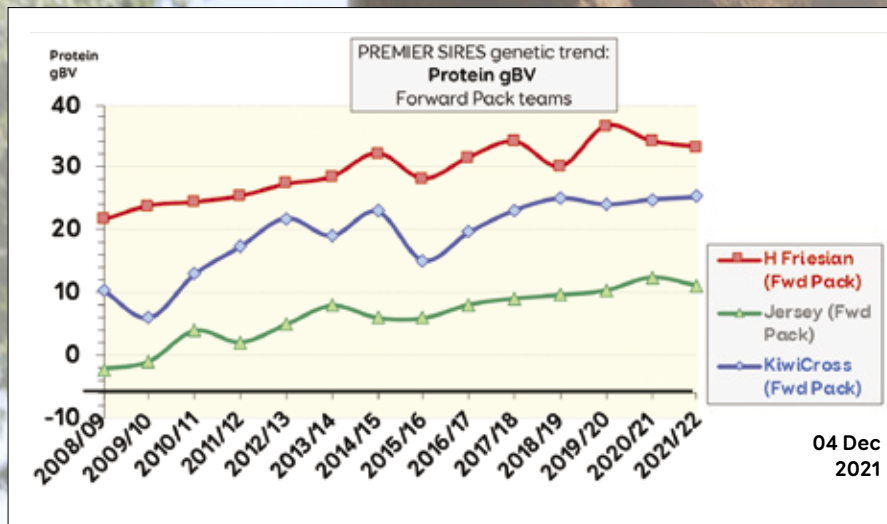
Some of the standout cows I was fortunate to view were bred from sires like Floyd, Superman, Integrity, Misty, Bastille, Laredo and Lamar.

My overall observation is that the Jersey breed in New Zealand is of high-quality, certainly punching above its weight, and Jersey farmers can be rightly proud of what they have achieved, especially over the last decade.

The lift in milksolid BVs for Jersey sires over the last 10 years is one of the many highlights for the breed, and currently it's no surprise to find multiple Jersey sires in LIC's Premier Sires teams with combined fat and protein BVs of above 50kg.

The high milksolid production, fertility, good udders, and liveweight of Jerseys makes them a sought after, efficient, and versatile breed for all milking regimes.

HIGH COMPONENT SIRES DEMAND ATTENTION



On the latest RAS list, eight of the top ten All Breeds Sires are LIC Jersey sires.

On page 10 are two graphs that display protein and fat BV's respectively of LIC's Premier Sires Forward Pack teams, and the improvement in the BVs between 2008/09 and 2021/22:

In the past few months the demand for Jersey females has been phenomenal, and auction prices reflect that. One of Superman's two-year-old daughters from the Posterity Stud fetched an all-time New Zealand record price of \$55,000! This is testament that quality always sells.

I'm fortunate to have the privilege to highlight some of the many superior milksolid Jersey sires currently available in Premier Sires teams.

All three bulls below have a combined milksolids BV greater than 50kg.

318009 Tironui Superman ET: Sired by Superstition out of the well proven Tironui Integ Meg, this sire from the Tironui Stud boasts an incredible combined milksolid BV of 70kg. Superman has certainly become one of my favourite proven bulls this year, having inspected multiple daughters with great capacity and very good udders. Superman graduated last season and is available in the potential Premier Sires Forward Pack and Daughter Proven teams.

321039 Foxton O First Class ET: Bred from within the Foxton herd, First Class is a high-ranking genomic young sire with excellent milksolid production, boasting a combined protein and fat gBV of 60kg. He is out of a cow family with big production and outstanding longevity. The three females behind this bull have an average of 10 lactations with PWs above 400. First Class is available in the potential Premier Sires Sexed Semen team.



Tironui Integ Meg, Dam of Superman



321039 Foxton O First Class ET

321023 Tawa Grove MV Ngatoro: From the Tawa Grove herd in Taranaki, Ngatoro is a high fat and protein Veracity son with a fat/protein gBV of 53kg. This bull is out of a high producing Jingo dam, which has already notched up seven outstanding lactations, including multiple lactations above 400 LW.

One of the great bulls of the past, Tawa Grove Maunga ET SJ3 (also bred by the Cartwrights), features on the dam side. This boy is available in the potential Premier Sires Forward Pack.

The Jersey offering is outstanding in 2022, be sure to watch the RAS List for latest bull information, together with updates on LIC's website which includes information on the genomic breeding worth of all teams individual bulls within those teams.



321023 Tawa Grove MV Ngatoro



by Michele van der Aa,
LIC sire analyst

Time flies when you're having fun, and this couldn't be truer for how I feel in the Sire Analyst role.

It's difficult to believe I'm quickly approaching a year in the role, and I find myself reflecting on all I've learnt in that time and recalling some standout moments I've been privileged to experience.

Travelling throughout the country to carry out dam inspections for the 2022 contract mating animals has been a particular highlight; I was continually blown away by the

BACK ON TOP & BETTER THAN EVER!

depth of pedigree and quality of the KiwiCross dams I saw, which served to reinforce my knowledge of how fiercely competitive it is in the KiwiCross space.

The recent NZAEL update saw KiwiCross cementing its place at the top, with LIC's 518038 Werders Premonition, bred by Thomas & Courtney Werder, ranking the highest gBW bull across all breeds at 469 gBW.

A proportion of the gains made in gBW points for KiwiCross sires are a direct result of the recent enhancements made to the Liveweight BV, which took effect in the same AE run (see page 6).

Liveweight has long been recognised as one of the defining traits of BW which measures cow efficiency. The improvement means that only weights measured from scales are included in BW (removing Traits Other than Production scores, previously also included).

The overall result has been the re-ranking of animals, with the outcome a more-accurate prediction of an animal's true genetic merit. Analysing the effect this liveweight change has had on dams and sires across the country underlines how valuable it can be to weigh your herd.



521035 Wiffens Centurion

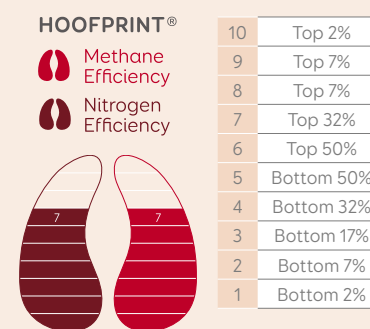
What is HoofPrint®?

LIC developed its HoofPrint index to provide farmers with an indication of the predicted environmental footprint of LIC's dairy genetics.

LIC's sires are rated on their emission and excretion values per kilogram of milksolids relative to a reference population.

Ranking system: The ranking system is from 10 to 1, with 10 being the best (lowest environmental impact per kg product) and 1 being the poorest ranking (highest environmental impact per kg product).

The distribution of ratings for the bulls in the reference population can be seen below:



In the above example, this bull ranked at 7 for both Methane Efficiency and Nitrogen Efficiency. Note it rates in the top-32% of bulls born since January 1st 2011.

These changes are timely, because during my travels farmer shareholders were acutely aware of the looming environmental proposals and changes that will directly impact the way the dairy industry operates into the future.

In 2020 LIC developed the HoofPrint® index to predict the environmental efficiency (enteric methane and urinary nitrogen) of our sires.

The HoofPrint calculation includes seven breeding values in its calculation. Individual animal measures on fertility and kilograms

of milksolids per kilograms of liveweight (made up of fat, protein and liveweight) have the biggest influence on an animal's environmental efficiency.

When looking across the sires catalogued this year, it's no surprise to see so many KiwiCross sires score highly on the HoofPrint index.

So it's easy to understand why we're seeing such an increase in the calibre of animals entering the KiwiCross scheme; Premier Sires sales confirm KiwiCross sales are increasing by 3.3%, and for the first time ever are surpassing both parent breeds (Holstein Friesian and Jersey) for total number of straws sold season-to-date. KiwiCross animals ooze efficiency, regardless of whether you look at environmental- or economic-efficiency.

We have it all here with this line up of genomic bulls available in the Alpha Catalogue and various Premier Sires teams.

521035 Wiffens Centurion: From the hardy West Coast comes an Arkans Barrier son by the name of Centurion, bred by Andrew & Geoff Wiffen. Born out of Gem, easily one of the most capacious cows around, Centurion has inherited this strength with a capacity gBV over 1. As an F6J10 sire, it's thrilling to see liveweight not compromised, balancing efficiency through his fertility and production traits, and supported with a gBV for udder overall of 0.51.

521028 Snowline Andy: Coming in at an impressive 481 gBW, Andy comes from a strong maternal line with his dam Empress boosting a PW greater than 600. An excellent balance of TOP scores across the profile can be found, reflecting his sire Accolade. Andy is a big-hitter for efficiency, with combined fat and protein gBVs of 78 kgs, positive volume, and a liveweight gBV of -12 kg.

Brian & Marian McDonald have bred a winner here!



521033 Greenmile Rifleman

521033 Greenmile Rifleman: There's plenty to say about Rifleman. An Inferno son from the well admired Queen Bee dam, Rifleman brings a lot to the table, boasting great production traits, strong fertility, and balancing this with a liveweight gBV of 17kg and an F7J9 breed mix. A yearling-friendly bull who delivers both udder scores and dairy confirmation scores that many seek. A big thank you to Bruce & Bronwyn Jensen for breeding such a well-rounded sire.



521031 Werders Olympian

521031 Werders Olympian: If breeding were a sport, we'd have found our Olympic hero right here! From the breeders who brought us Premonition, we have Thomas and Courtney Werder to thank once again for providing such excellence. From a solid maternal line, Olympian's dam is consistently getting in calf each season, and her latest PW sits at an impressive 505.

A Prestige son, Olympian brings to the table impressive farmer traits, complemented with huge capacity and quality udders. He balances this with a combined fat and protein gBV of 67kgs. Positive fertility completes this compelling F9J7 sire.

Potential Spring 2022 Holstein-Friesian Daughter Proven Team

Sire	Sire
118053 GREENWELL GR GOVERNOR S1F	115021 GORDONS AM LANCELOT S3F
117068 MEANDER SB ARROW-ET S2F	118014 DEANS MH ATLANTIS S2F
117038 TANGLEWOOD GL HARDY	118071 GLENMEAD SB TRAPEZE S1F
118076 MEANDER TT FEATURE-ET S2F	118103 WOODCOTE BG VICTORY S1F
115077 TAFTS WM TRANQUIL-ET	118027 BUTLERS MANDATE MAYOR S1F
117067 MEANDER KJ RHAPSODY S2F	118065 TATAWAI MG COMMANDER S2F
115062 PAALVASTS MT CYCLONE S2F	118056 LIGHTBURN MG RELIC S2F
117090 TRONNOCO MH SAMBA-ET S3F	
118068 BAGWORTH G1 ORIGINAL S3F	

WEIGHTED AVERAGES OF PREMIER SIRES - \$324/99%

Management	-0.5	0	0.5	1
Adapts to Milking	0.36			quickly
Shed Temperament	0.36			placid
Milking Speed	0.17			fast
Overall Opinion	0.45			desirable
Conformation				
Stature	0.65			tall
Capacity	0.33			capacious
Rump Angle	-0.07			sloping
Rump Width	0.43			wide
Legs	-0.11			curved
Udder Support	0.43			strong
Front Udder	0.38			strong
Rear Udder	0.32			high
FrontTeat Placement	0.08			close
Rear Teat Placement	0.24			close
Teat Length	-0.05			long
Udder Overall	0.40			desirable
Dairy Conformation	0.43			desirable



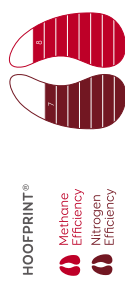
HOOFPRINT®

Potential Spring 2022 Holstein-Friesian A2A2 Team

Sire	Sire
120002 MILL-RIDGE TS FLEX-ET S1F	121043 MAHAREE TO NIRVANA S2F
120035 MAH SUPER STARDUST S1F	120088 BALDRICKS WD INTEL-ET S2F
120001 MILL-RIDGE TS FINN-ET S1F	120055 DICKSONS VR MERGER-ET S1F
121076 HOWSES GG ECLIPSE S1F	121063 MARCHEL WM JACKPOT-ET S2F
121007 SANSONS GG VIRIDIAN S1F	
121032 MEANDER TR ALADDIN-ET S1F	
121062 CHISHOLM BROKER S1F	
120045 WOODCOTE VHR LUCID-ET S1F	
121069 TAFTS TRADESMAN S2F	
121054 BUSYBROOK MA SWISH-ET S1F	

WEIGHTED AVERAGES OF PREMIER SIRES - \$355/97%

Management	-0.5	0	0.5	1
Adapts to Milking	0.41			quickly
Shed Temperament	0.41			placid
Milking Speed	0.20			fast
Overall Opinion	0.52			desirable
Conformation				
Stature	0.72			tall
Capacity	0.26			capacious
Rump Angle	-0.02			sloping
Rump Width	0.43			wide
Legs	-0.09			curved
Udder Support	0.32			strong
Front Udder	0.30			strong
Rear Udder	0.17			high
FrontTeat Placement	0.17			close
Rear Teat Placement	0.20			close
Teat Length	-0.03			long
Udder Overall	0.32			desirable
Dairy Conformation	0.35			desirable



HOOFPRINT®

Potential Spring 2022 Holstein-Friesian Forward Pack Team

Sire	Sire
118053 GREENWELL GR GOVERNOR S1F	121005 PEMBERTON GG PROPANE S1F
117068 MEANDER SB ARROW-ET S2F	121057 TRONNOCO E SAINI-ET S3F
117038 TANGLEWOOD GL HARDY	119014 BUELIN BM EQUATOR S2F
118076 MEANDER TT FEATURE-ET S2F	120030 BELLAMYS GG GEYSER-ET S1F
115077 TAFTS WM TRANQUIL-ET	121035 BALANTIS TR TRICK-ET S1F
117067 MEANDER KJ RHAPSODY S2F	121027 MEANDER TR AMAZON-ET S1F
121083 MAIRE TS JAGER-ET S1F	120021 MCKAY BM BAKERBOY-ET S2F
120073 MEANDER TS ALLOY-ET S1F	121029 MEANDER GG WIPEOUT-ET S1F
121049 AWAKAU MYTH NOTABLE S1F	
121053 BUSYBROOK BE IMPLY-ET S2F	

WEIGHTED AVERAGES OF PREMIER SIRES - \$365/98%

Management	-0.5	0	0.5	1
Adapts to Milking	0.41			quickly
Shed Temperament	0.41			placid
Milking Speed	0.21			fast
Overall Opinion	0.50			desirable
Conformation				
Stature	0.61			tall
Capacity	0.23			capacious
Rump Angle	-0.04			sloping
Rump Width	0.49			wide
Legs	-0.12			curved
Udder Support	0.48			strong
Front Udder	0.42			strong
Rear Udder	0.37			high
FrontTeat Placement	0.18			close
Rear Teat Placement	0.24			close
Teat Length	-0.05			long
Udder Overall	0.49			desirable
Dairy Conformation	0.33			desirable



HOOFPRINT®

Potential Spring 2022 Holstein-Friesian Sexed Team (A2A2)

Sire	Sire
121040 SPRING RIVER GG SPYRO S1F	120040 MAKKERS BUDDYBOY S2F
121036 BALANTIS TR TONTO-ET S1F	121026 MAH FBE YARDMASTER S1F
121079 WAIAU KEGZY ROYALE-ET S1F	121045 BELLAMYS GLADIATOR-ET S3F
121046 BELLAMYS RS GADSBY-ET S1F	121067 GREENWELL BC BATMAN S1F
120015 ASHDALE GE HIGHRISE S2F	119002 BELLAMYS DM GALANT-ET S1F
121020 WAITARIA TRAPEZE ZEUS S1F	120051 DICKSONS BM METEOR-ET S2F
120041 MAKKERS MONEYMOON S2F	
120080 TRONNOCO M SAQUOON-ET S3F	
121077 CHATFIELDS TS ZINGER S1F	
119008 POTO GR CHOICE S1F	

WEIGHTED AVERAGES OF PREMIER SIRES - \$326/97%

Management	-0.5	0	0.5	1
Adapts to Milking	0.28			quickly
Shed Temperament	0.29			placid
Milking Speed	0.08			fast
Overall Opinion	0.37			desirable
Conformation				
Stature	0.67			tall
Capacity	0.35			capacious
Rump Angle	-0.04			sloping
Rump Width	0.46			wide
Legs	-0.02			curved
Udder Support	0.43			strong
Front Udder	0.39			strong
Rear Udder	0.28			high
FrontTeat Placement	0.23			close
Rear Teat Placement	0.34			close
Teat Length	-0.16			desirable
Udder Overall	0.44			desirable
Dairy Conformation	0.44			desirable

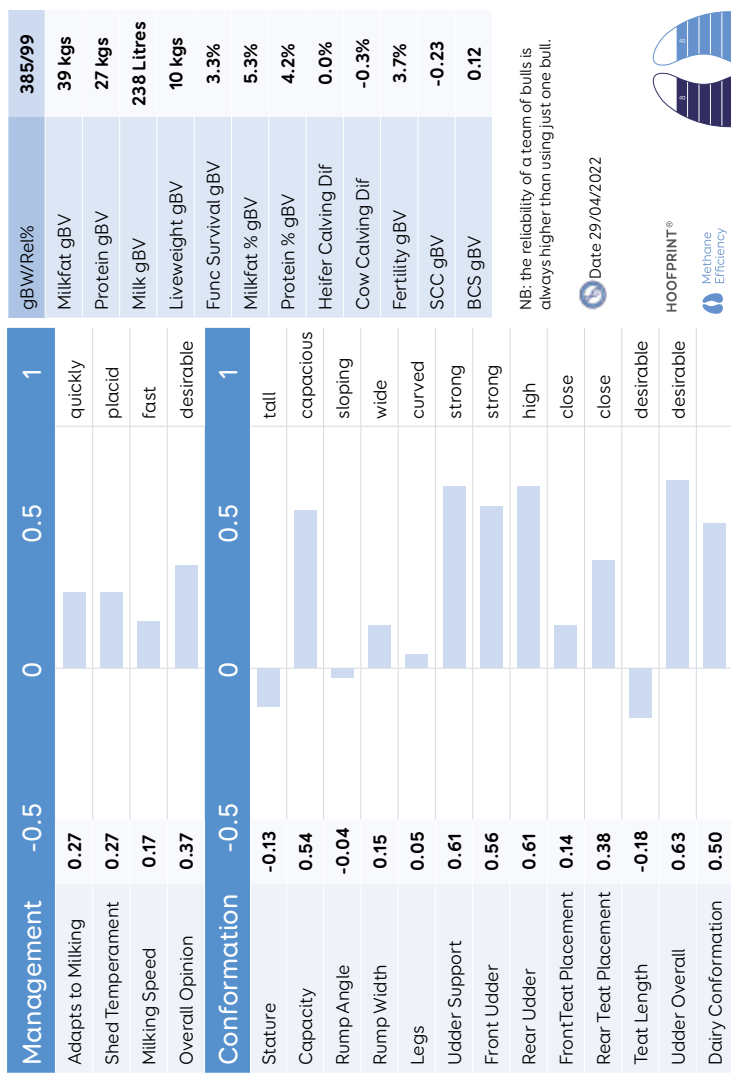


HOOFPRINT®

Potential Spring 2022 KiwiCross® Daughter Proven Team (F9J7)

Sire	Sire
518038 WERDERS PREMONITION	517073 LYNBROOK KNOCKOUT
516066 WALTON INFERNO	518069 TOTARA VIEW NAVIGATOR
518019 DIGGS HARDCOPY	
515025 SPEAKES SLIPSTREAM ET	
518063 VAN STRAALENS SAFARI	
518053 PAYNES PROMINENCE-ET	
518016 HORIZON ASCOTT	
517001 ARKANS PATRIARCH-ET	
518017 HORIZON BARNSTORMER-ET	
518061 INNOVATION HOMEBREW	

WEIGHTED AVERAGES OF PREMIER SIRES - \$385/99%



Date 29/04/2022

HOOFPRINT®
Methane Efficiency
Nitrogen Efficiency



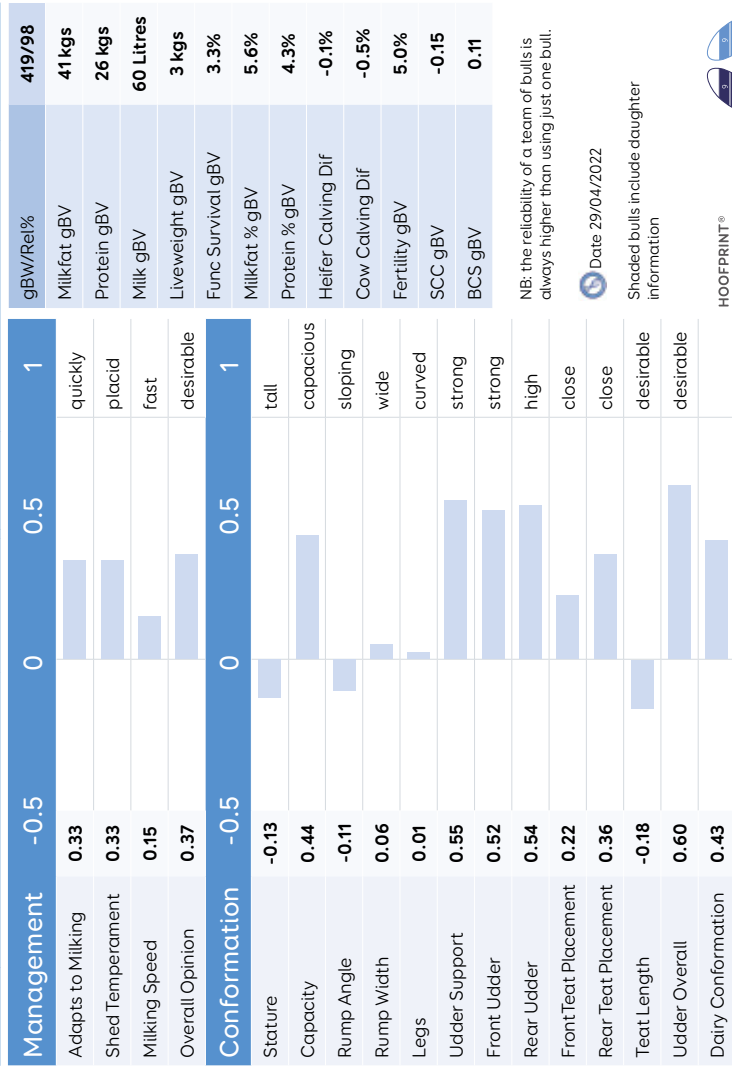
NB: the reliability of a team of bulls is always higher than using just one bull.



Potential Spring 2022 KiwiCross® Forward Pack Team (F9J7) (A2A2)

Sire	Sire
518038 WERDERS PREMONITION	521060 STONY CREEK NEPTUNE-ET
516066 WALTON INFERNO	521031 WERDERS OLYMPIAN
518019 DIGGS HARDCOPY	521066 BURMEISTER JAMIE-ET
515025 SPEAKES SLIPSTREAM ET	521061 SECRETERRY SANDSTORM-ET
518063 VAN STRAALENS SAFARI	521002 PAYNES MANOEUVRE-ET
518016 HORIZON ASCOTT	521049 RHANTANA VISION ET
521050 KASBA KRACKEN ET	521005 PAYNES SUBLIME-ET
520042 BURMEISTERS HERMAN	520068 MORGANS MALAWI
521015 PAYNES STAMINA-ET	520045 ETTICK HIGH REGARD
521033 GREENMILE RIFLEMAN-ET	519078 BURGESS PRESTIGE-ET

WEIGHTED AVERAGES OF PREMIER SIRES - \$419/98%



Date 29/04/2022

Shaded bulls include daughter information

HOOFPRINT®
Methane Efficiency
Nitrogen Efficiency

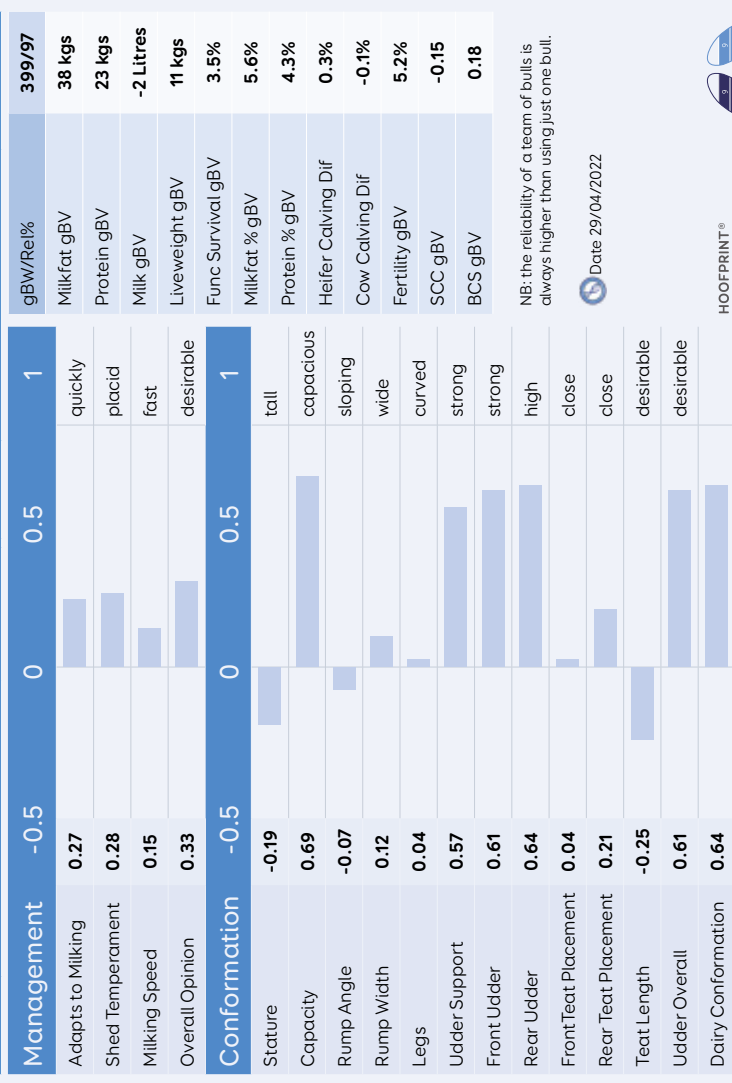


NB: the reliability of a team of bulls is always higher than using just one bull.

Potential Spring 2022 KiwiCross® Sexed Team (F9J7) (A2A2)

Sire	Sire
521028 SNOWLINE ANDY-ET	520008 JULIAN MULTIPLIER-ET
521059 HACKER ADVANTAGE-ET	521037 SPRING RIVER BRADY
521035 WIFFENS CENTURION	521016 WAIMATA TOPSPEED-ET
521041 ARKANS POTENTIAL-ET	521039 PUKERIMU START-UP-ET
521038 SPRING RIVER JUPIITER	520089 BALDRICKS SIGNIFICANT
521072 BALDRICKS SPECTACULAR	521051 ARKANS WILLPOWER
520007 JULIAN STRAIGHT UP	
521046 HORSFORDS KENNINGTON	
521088 VAN STRAALENS HULK-ET	
521048 RHANTANA IRIS ET	

WEIGHTED AVERAGES OF PREMIER SIRES - \$399/97%



Date 29/04/2022

NB: the reliability of a team of bulls is always higher than using just one bull.

HOOFPRINT®
Methane Efficiency
Nitrogen Efficiency



Potential Spring 2022 Jersey Daughter Proven Team

Sire	Sire
318009 TIRONUI SUPERMAN ET	315045 GLENUJ DEGREE HOSS ET
318035 SHELBY BC LOTTO ET S3J	317049 SHELBY SS LORENZO S3J
318015 GLENUJ SUPER LAMAR	
318021 GLANTON DESI BANFF	
318066 LITTLE RIVER OI SAMURAI	
318020 GLENUJ SUPER LARKIN ET	
318001 OKURA PEPPER LUCCA	
318029 GLENUJ BC LAREDO ET S3J	
317061 LITTLE RIVER TRIDENT S3J	
316039 ULMARRA TT GALLIVANT	

WEIGHTED AVERAGES OF PREMIER SIRES - \$421/99%

Management	-0.5	0	0.5	1	gBW/Rel%	421/99
Adapts to Milking	0.32			quickly	Milkfat gBV	39 kgs
Shed Temperament	0.32			placid	Protein gBV	16 kgs
Milking Speed	0.22			fast	Milk gBV	-202 Litres
Overall Opinion	0.40			desirable	Liveweight gBV	-35 kgs
Conformation	-0.5	0	0.5	1	Func Survival gBV	2.8%
Stature	-0.72			tall	Milkfat % gBV	5.8%
Capacity	0.49			capacious	Protein % gBV	4.3%
Rump Angle	-0.33			sloping	Heifer Calving Dif	-2.3%
Rump Width	0.11			wide	Cow Calving Dif	-0.8%
Legs	0.11			curved	Fertility gBV	4.1%
Udder Support	0.34			strong	SCC gBV	-0.20
Front Udder	0.46			strong	BCS gBV	0.08
Rear Udder	0.56			high		
Front Teat Placement	0.15			close		
Rear Teat Placement	-0.02			close		
Teat Length	0.09			desirable		
Udder Overall	0.52			desirable		
Dairy Conformation	0.47			desirable		

NB: the reliability of a team of bulls is always higher than using just one bull.

Date 29/04/2022

HOOFPRINT®



Potential Spring 2022 Jersey Forward Pack Team (A2A2)

Sire	Sire
318009 TIRONUI SUPERMAN ET	321003 FREYDAN HOSS CRUDEN ET
318035 SHELBY BC LOTTO ET S3J	321205 POSTERITY BANFF DESIRE
318015 GLENUJ SUPER LAMAR	321203 NORLANDS PKC ROXTON ET
318021 GLANTON DESI BANFF	320004 OKURA SLL ITIGATOR
321039 FOXTON OM FIRST CLASS ET	320014 EVLEEN GL LIGHTHOUSE
321023 TAWA GROVE MV NGATORO	320200 THORNLEA MISTY TOPSHOT ET
320020 THORNWOOD BANFF TITUS	
320027 CHARLTONS MISTY MAGNIFY	
321050 BAILEYS GL DECIPHER ET	
319066 TIRONUI GB MONTAGE ET	

WEIGHTED AVERAGES OF PREMIER SIRES - \$423/98%

Management	-0.5	0	0.5	1	gBW/Rel%	423/98
Adapts to Milking	0.28			quickly	Milkfat gBV	39 kgs
Shed Temperament	0.28			placid	Protein gBV	13 kgs
Milking Speed	0.17			fast	Milk gBV	-378 Litres
Overall Opinion	0.36			desirable	Liveweight gBV	-29 kgs
Conformation	-0.5	0	0.5	1	Func Survival gBV	2.8%
Stature	-0.68			tall	Milkfat % gBV	6.1%
Capacity	0.51			capacious	Protein % gBV	4.4%
Rump Angle	-0.33			sloping	Heifer Calving Dif	-2.2%
Rump Width	0.09			wide	Cow Calving Dif	-0.8%
Legs	0.08			curved	Fertility gBV	3.9%
Udder Support	0.37			strong	SCC gBV	-0.30
Front Udder	0.43			strong	BCS gBV	0.10
Rear Udder	0.59			high		
Front Teat Placement	0.15			close		
Rear Teat Placement	0.00			close		
Teat Length	-0.05			desirable		
Udder Overall	0.53			desirable		
Dairy Conformation	0.47			desirable		

NB: the reliability of a team of bulls is always higher than using just one bull.

Date 29/04/2022

Shaded bulls include daughter information

HOOFPRINT®



Potential Spring 2022 Jersey Sexed Team (A2A2)

Sire	Sire
321008 GLANTON FLYNN BRISBANE	321045 CARATACUS TB DUKE
321018 BELLS PC FELLOW	320035 SHELBY HOSS LATITUDE
321033 MILNE GH VICTORIOUS	
321010 GLANTON PUNCH BELFAST ET	
320034 FOXTON GL CELESTIAL	
320028 LOCHREA GL INSULATOR	
320030 GLENUJ CM LAZARO	
321015 WILLIAMS MATUA FANCY	
321002 PURIRI MATUA SABRE	
321204 HAWTHORN GROVE GH OGANEV	

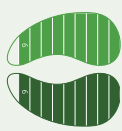
WEIGHTED AVERAGES OF PREMIER SIRES - \$383/96%

Management	-0.5	0	0.5	1	gBW/Rel%	383/96
Adapts to Milking	0.30			quickly	Milkfat gBV	33 kgs
Shed Temperament	0.29			placid	Protein gBV	12 kgs
Milking Speed	0.23			fast	Milk gBV	-363 Litres
Overall Opinion	0.39			desirable	Liveweight gBV	-28 kgs
Conformation	-0.5	0	0.5	1	Func Survival gBV	2.9%
Stature	-0.68			tall	Milkfat % gBV	5.9%
Capacity	0.57			capacious	Protein % gBV	4.4%
Rump Angle	-0.22			sloping	Heifer Calving Dif	-2.1%
Rump Width	0.03			wide	Cow Calving Dif	-1.2%
Legs	0.11			curved	Fertility gBV	4.2%
Udder Support	0.38			strong	SCC gBV	-0.13
Front Udder	0.41			strong	BCS gBV	0.12
Rear Udder	0.59			high		
Front Teat Placement	0.15			close		
Rear Teat Placement	0.02			close		
Teat Length	-0.08			desirable		
Udder Overall	0.53			desirable		
Dairy Conformation	0.54			desirable		

NB: the reliability of a team of bulls is always higher than using just one bull.

Date 29/04/2022

HOOFPRINT®



BEEF



by Charlotte Gray, LIC beef product specialist

On Your Marks

Reducing non-replacement calves, accelerating genetic gain, reducing the number of service bulls on farm, or increasing the number of beef cross animals to take through their system:

Whatever the goal is, farmers are today utilising specialty semen options and technologies, such as sexed semen and automation, to achieve their desired results.

As a consequence, the genetic merit of the national herd is increasing faster than ever, but so too is the pool of beef cross being born on dairy farms every year.

The evolution of the dairy industry's evaluation system means that, at the farmer's fingertips, are tools such as three-generation pedigrees, indices (BW, PW, LW), individual animal breeding values for traits



In conjunction with AngusPure, LIC is offering dedicated beef cross tag calf packs.

of interest, DNA verification to sire and dam, and animals' A2 or BVD status.

The expectations on the quality of the dairy herd have been set high, so it's reasonable to assume the expectations on beef cross calves can only grow.

Buyers of beef calves have traditionally had to rely on the honesty of sellers, and the markings of the calf, to best-estimate quality. However, one Angus bull can throw calves that look no different to the calves of another bull, but at the time of slaughter there will always be a difference of kilos and dollars.

Recognising the value of the better calves is difficult at such a young age, but LIC is proud to be involved in the ongoing improvement of beef cross calves available in the country.

For the first time, in collaboration with AngusPure, LIC is offering

dedicated beef cross tag calf packs.

For farmers that utilised performance-recorded or BeefPrint®-evaluated Angus sires, or BeefPrint-evaluated Profit Maker® and Simmental sires in 2021, there are a number of tag options to draw buyers' eyes to your animals.

BeefPrint is the beef-specific environmental index that estimates the methane and nitrogen efficiency of LIC's catalogued beef sires. Inherent in this index is feed efficiency, and with feed costs being a substantial expense across both dairy and beef operations, there are opportunities here for improved outputs from the same inputs.

If you're using some of the best bulls available, make that clear. Record your beef cross calves in MINDA LIVE, and tag with the Angus X Dairy and BeefPrint Allflex Premium Calf Packs.



by Brent Boyce, FarmWise consultant

The last four seasons have seen a significant uptake in farmers making changes to the frequency with which they're milking their cows.

Traditionally, most herds have been milked twice a day (2AD), although once-a-day (OAD) milking, as an all-season regime, has seen continued uptake during the past few decades.

In November 2001, the first foray into an alternative regime was undertaken in Murchison, with a milking regime of 14-, 16-, and 18-hourly splits. This was essentially three milkings over two days (3in2).

Consequently, as more farmers realised that (when transferring



New milking regimes with reduced hours can make dairying a more attractive career option

ALTERNATIVE MILKING REGIMES

from 2AD to 3in2), production after 4-5 months' lactation wouldn't fall, the popularity of 3in2 quickly grew.

With this, some farmers realised that hours could change-up even more, to 12-18-18, or to 10-19-19 splits, for example.

The biggest limitation of 3in2 is that weekends vary: There is a single milking one Saturday, but the next Saturday there is a double milking. This is not conducive to modern lifestyles, with rosters, family life, and staff planning now high on the priority list.

In 2019, I had a light bulb moment after re-writing my findings on initiating and implementing 3in2 milking since 2002. With input from

Steve Davis, LIC senior scientist, I visualised and implemented 10in7 (and similar regimes) on several of local Tasman farms. Following this, I published my thinking and findings on these new regimes, and effectively introduced variable milking frequency to the dairy farming public, with the new regimes adopted both domestically and internationally.

10in7 is basically 3 days a week at 2AD; and 4 days a week at OAD (10 milkings/week); see Table 1 below for an illustration of how the roster works.

10in7 has meant farmers can now become weekend centric; sleep-ins are possible four days a week, including both days in the

Table 1: Milking Frequency Options

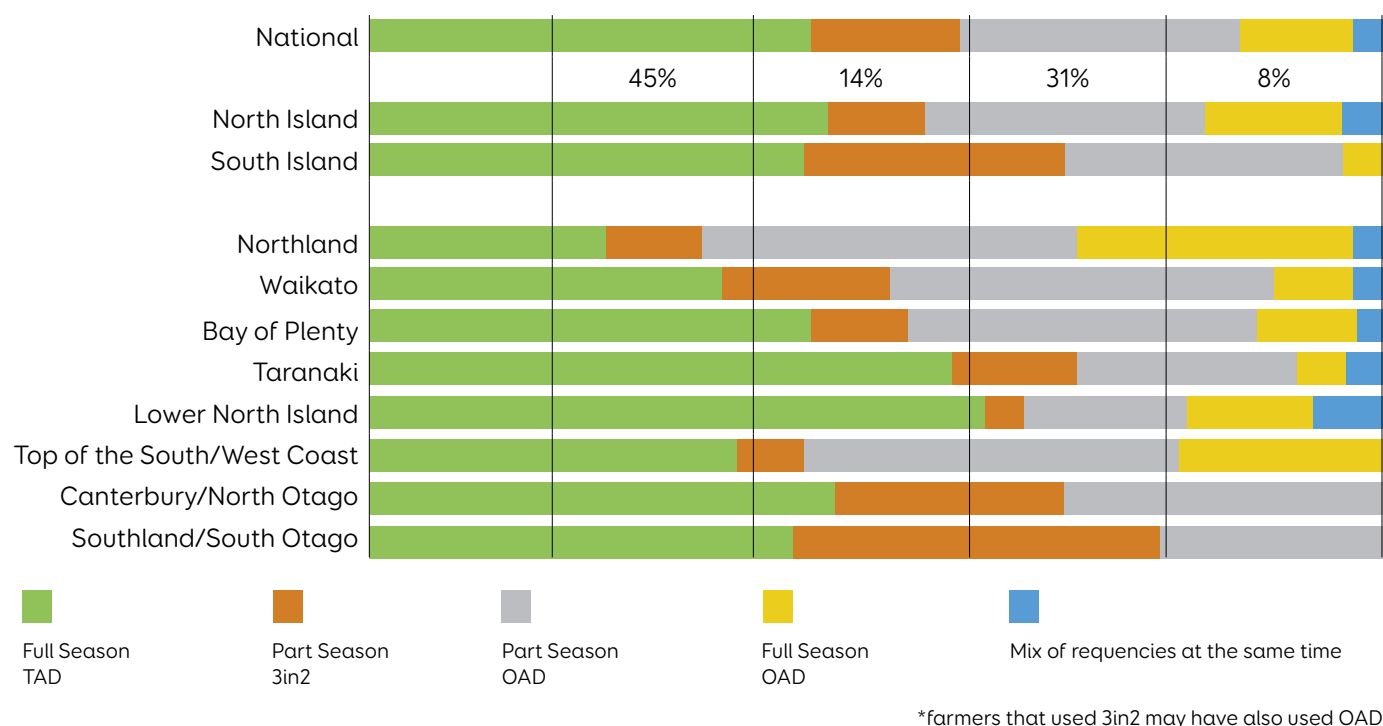
Milking Frequency Options (times indicative)									
Day	2AD	13in7	12in7	11in7	3in2 Milking		10in7	9in7	OAD
					Week 1	Week 2			
Mon	5am-3pm	5am-3pm	5am-3pm	5am-3pm	5am-3pm	10am	5am-3pm	5am-3pm	6am
Tue	5am-3pm	5am-3pm	5am-3pm	5am-3pm	10am	5am-3pm	10am	10am	6am
Wed	5am-3pm	5am-3pm	5am-3pm	10am	5am-3pm	10am	5am-3pm	10am	6am
Thu	5am-3pm	5am-3pm	10am	5am-3pm	10am	5am-3pm	10am	5am-3pm	6am
Fri	5am-3pm	5am-3pm	5am-3pm	5am-3pm	5am-3pm	10am	5am-3pm	10am	6am
Sat	5am-3pm	5am-3pm	5am-3pm	10am	10am	5am-3pm	10am	10am	6am
Sun	5am-3pm	10am	10am	10am	5am-3pm	10am	8am	10am	6am
Milkings week	14	13	12	12	10.5	10	9	7	

continued p22...



Alternative milking regimes have many advantages but can throw up significant challenges during AB mating, and these need to be planned for ahead of the AB Technician visit.

Table 2: Milking Frequency Options



continued p21...

weekend. Other regimes, such as 9in7 and 11in7 have also become popular, as they are similarly weekend centric.

Production can be maintained, and at times increased, by undertaking alternative milking frequencies, especially after 4-5 months' lactation.

Fewer milkings also mean use of resources and associated costs are also reduced, improving farm profitability.

It is now becoming widespread for farmers to do 10in7 or 9in7 all season.

Some farmers are however doing a mix of several regimes; for example, 2AD at the start of the season, 10in7 at Christmas time, and finishing up with OAD from April.

Undertaking a mix of regimes can mean no loss in production at all, while significant time and cost savings occur. The sustainability of the business is enhanced; and the reduced hours (and well managed weekends) makes a career in dairying considerably more attractive for staff.

The uptake of these new regimes has considerable impact on how

farmers are milking their cows: Table 2 above shows that fewer than 50% of farms now milk their cows 2AD all season; compare this to 20 years ago, when most farms (>90%) milked 2AD all season.

Changes to milking regimes require changes to other farm management areas, which also need to align with service providers.

For herd testing, it's important the farm can adjust to help fit herd testing dates. Often testing laboratories are fully scheduled, and cannot change dates easily.

For a 10in7 regime, with a OAD milking on the Thursday at 10am, it would be best to do a 2AD milking that day too (same as Wednesday and Friday). The benefits are two-fold: Better data, and avoiding the hassle of trying to change the herd test date.

The artificial breeding (AB) period throws up similar challenges. While farmers and their consultants try hard to manage mating according to the 10in7 regime (hours and timing), the different schedules cause considerable issues for AB Technicians.

Last season, FarmWise consultants and their clients found that by keeping all the morning milkings at the same time (say, at 5am), and simply adding in the three afternoon milkings (Mon/Wed/Fri, at say, 3pm), production was maintained without significant losses.

At the end of the AB period, it was simply a case of reverting to the later morning milkings of 10in7 (at say, 10am on Tue/Thu/Sat/Sun).

As with all milking regimes in a pasture-based farming system, the best animal for alternative milking regimes is a high quality, high breeding worth (BW) animal.

Lincoln University Dairy Farm (LUDF) in Canterbury is currently undertaking its first entire season of 10in7. During the season significant information is being collected, and the farm will publish outcomes in the coming months and years.

There are hundreds of farmers who are operating under alternative milking regimes, and most do it very well. The case studies on the right of this page are two examples of farmers that have achieved good results in the last 3-4 seasons. Of note are improved production, mating results, management and efficiency - achieved with considerably less work.

Case Study - Paddy & Zoey Berry (Dunsandel)

Season	17/18	18/19	19/20	20/21
Milking Routine	TAD till Jan lights OAD from Jan All cows OAD May	TAD till 21/2 3in2 till 7/5 OAD till end may	TAD till 27/12 10in7 till 14/4 9in7 till end May	3in2 till 25/12 10in7 till end May
SCC Avg	68,000	74,000	67,000	72,000
MS	275,000	305,000	317,929	312,900
Cows at Peak	596	636	616	615
kgMs/cow	461	480	516	509
kgMs/ha	1647	1826	1904	1874
Stocking rate	3.6	3.8	3.7	3.7
Avg BCS & PSC	4.9	5.1	5.1	5.1
Avg BCS March/ April	4.3	4.3	4.3	4.7
6 weeks incalf	74%	71%	73%	71%
Not in Calf Rate	13%	13%	10%	13%
Mating	5.5wks AI 3wks Bulls, 2wks SGL	10wks all AI No Bulls	10wks all AI No Bulls, Collars	10wks all AI No Bulls, Collars
Bought in feed	553 t	630 t	701 t	490 t
Milkings/year	537	516	464	441
MS/Milking	0.86	0.93	1.11	1.15

Case Study - Jason & Beth Macbeth (Tasman)

Season	17/18 Baigents	18/19 Baigents	19/20 Baigents
Milking Routine	TAD till 13/12 3in2 till 3/2 OAD till 31/5	TAD till 21/2 3 in2 till 7/5 OAD till 31/5	TAD 1/8 till 23/10 10in7 24/10 till 2/12 OAD 3/12 till 31/5
SCC Avg			
MS	172, 282	187,449	200,545
Cows at Peak	425	410	423
kgMs/cow	419	457	474
kgMs/ha	1393	1464	1567
Stocking rate	3.3	3.2	3.3
Avg BCS & PSC	5.0	5.0	5.0
Avg BCS March/April	4.5	4.5	4.5
6 weeks incalf	81%	80%	86%
Not in Calf Rate	10%	12%	6%
Mating	10.5wks, 6 AI, 4.5 with bulls	Reduced from 10.5 down to 9weeks	9 weeks, 6 AI, 3 with bulls
Bought in feed		419 t	371 t
Milkings/year	466	446	404
MS/Milking	0.90	1.03	1.17

As the data sets grow and we learn more, farmers are set gain more confidence in the changes, and the use of alternative milking regimes will continue to spread both here and overseas - improving profitability and lifestyles.



Rhys and Jo Forsyth at their Ruawai, Northland, farm.

Getting Better @ Getting Better

This calving season will be a little different for dairy farmer Jo Forsythe thanks to a recent MINDA LIVE training session that marked somewhat of a 'turning point' in her confidence and utilisation of the technology.

Jo says MINDA LIVE and the associated MINDA App will cut down double-handling and provide her with more-targeted management insights (data, information, reports) where and when it's needed.

"This calving season I'll look to run reports that split out the herd so that we have a better view of our early-calvers. We like to pull out the ones that tend to be early, but their udders might not drop until later."

She'll also use MINDA software to identify cows that have previously had calving difficulty, and any animals that required treatment after birth. "That way we can keep an eye on them so they don't go down again."

Later in the season, when it comes to mating or culling, Jo will produce reports that provide key insights about which cows, for example, are best to target for premium semen, or which cows are better to sell or cull.

She and husband Rhys often believed they had a good idea of who the top and bottom performers were, but MINDA LIVE's data on-screen was now enabling them to review some of their assessments, re-thinking who the best and poorest breeders and future-producers would be:

"We try to have the best up-and-coming animals coming into the herd,

and from there, we also choose our culls. Having all of the data in the MINDA system makes culling, and even decisions on surplus cows, so much easier because we can see the animals who are better off being sold rather than being sent to the works."

Jo and Rhys are part of LIC's Sire Proving Scheme, and this has given them further appreciation of the importance of accurate cow information:

"SPS is invaluable for pushing for the best herd you can possibly run; having to choose animals to cull is now really hard. Our data and strong parentage information helps... there's nothing worse than culling a good animal, and down the line learning you've held on to one that isn't performing."

Today Jo is one of the approximate 90% of farmers who are using MINDA LIVE, many of which have taken the opportunity to upskill during the past few years.

In the first half of this year, LIC trainers educated a total of 1000 farmers or farm staff in a mix of one-to-one and group sessions; these sessions were held in a mix of forums that included online live chats, on-farm face-to-face visits, and group sessions that took place in total of 80 venues across New Zealand.

Getting to grips with a more-streamlined way of data input and on-the-spot access to key herd information is seen as a crucial part of farm management and herd improvement, and Jo says she is no exception.

Key MINDA LIVE Reports For Upcoming Events On-Farm

CALVING:

- Expected Calving by Cow
- Expected Calving by Date
- Calving Rate
- Calves Reared
- Expected Calving Pattern

MATING:

- Submission Rate Report
- Cows Without Matings
- Pregnancy Test Worksheet
- Summary of Matings
- Bulls Used During Mating

MILKING:

- Herd Test Results
- Somatic Cell Count

HERD:

- Group Profile
- Herd Summary

She doesn't regret taking an hour out of her day in April for one-on-one training session with a specialised LIC trainer.

"Joss (the trainer) provided a number of easy tips that were new to me - she was amazing, so helpful and took me through things at my own pace."

Originally set-down for a personalised face-to-face visit, which had to be cancelled, the training session was later conducted online with the use of Zoom; this made for a quick and efficient session in the comfort of Jo's home.

Two different MINDA training sessions are being run through to July this year: free group beginner classes and private, one-hour, one-on-one sessions which cost \$65.

There are limited spots remaining, but further training sessions are likely to be offered by LIC early in 2023.

Farmers should get in contact with their Agri Manager for more information.

An extensive MINDA help page is also available on LIC's website, including step-by-step instructions and simple-to-follow guides to help farmers get more out of MINDA.



by Jessica Bedford, product experience manager (MINDA).

With approximately 90% of farmers now using MINDA LIVE and the MINDA App, the software is firmly entrenched as New Zealand dairy farmers' leading cow information and dairy-animal management software.

Farmers can enter events in the App as they happen and make the most of valuable reports this calving season, with recent developments making it easier-than-ever to analyse data in pursuit of herd improvement goals.

The *Expected Calving Spread* report, found under the *Reporting* tab in MINDA LIVE, provides a handy visual overview of the upcoming calving spread, allowing farmers to prepare the team for what are likely to be the busier days or calving periods.

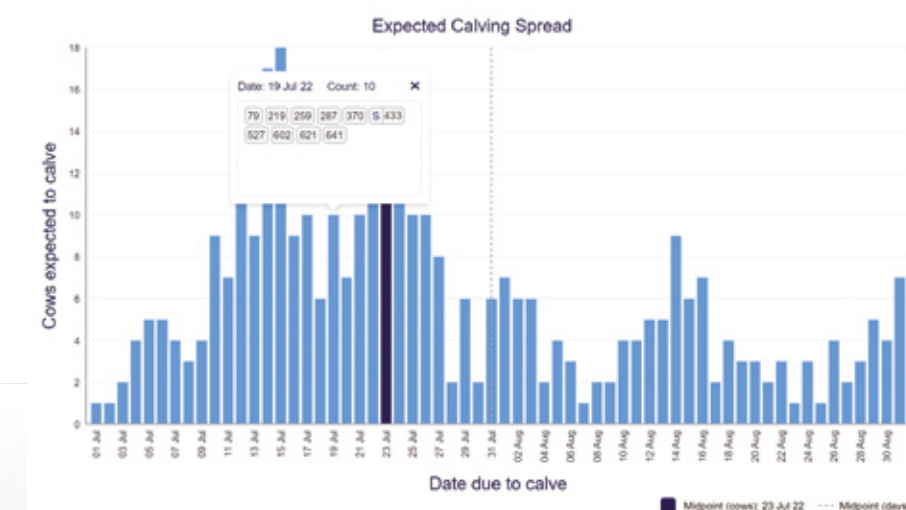
The report illustrates the number of animals expected to calve each day throughout the calving period, along with the midpoint of cows calved, and the midpoint of days in the calving period.

When using the report within MINDA LIVE, the bars are clickable and will display and identify the cow tag numbers of those expected to calve on any given day.

For those that prefer paper-in-hand, the report can be printed and taken down to the shed for everyone on farm to view.

When printing, the report will also display the cows that are due to calve in their expected calving date order (for easy reference when on farm).

FAVOURITE MINDA FEATURES FOR CALVING



Improving all the time

New features farmers have requested in MINDA are regularly rolled out as part of the MINDA *Improvement Roadmap*. During the past year, 21 features or enhancements have been added to MINDA, including *NAIT-only Animal Recording*, the *Pregnancy Confirmation Report*, and the *Expected Calving Spread Report*.

When deciding what new features will be developed next, LIC uses several criteria, including time-of-season and the frequency of the request.

Enhancements are designed to add value for farmers, their staff, and vets at the right time of the season - all changes are driven by direct farmer feedback (which gets collated in LIC's feedback log).

Favourite MINDA features for calving:

1. The Calving Schedule (MINDA App):

While out on farm, use the calving schedule to see which of your animals are expected to calve in the coming days. You can make on-the-spot changes to your calving schedule; simply select a cow number to record a calving.

2. Expected Calving Reports (MINDA LIVE)

For those that prefer paper-in-hand, there are three handy reports leading up to, and during, the calving period. The *Expected Calving by Date* and *Expected Calving Spread* provide a summary of cows due to calve in chronological order. The *Expected Calving by Cow* helps identify additional information such as the expected calf details.

3. Record Calving (MINDA App)

Recording calvings in the app will save time, as the event can be recorded on-the-spot (while in the paddock!); there's no need to write down the details and wait until you're home, which avoids duplication of work and helps with accuracy.

4. Post-Calving Reports (MINDA LIVE)

Once you've made it through calving and have some time to review your data, run a *Calves Reared* report in MINDA LIVE. This will show all the animals recorded as 'reared' in your MINDA records. The report will help identify calves that are missing a sire, calves kept from non-AB sires, and calves with low breeding worth that could be considered for sale.

Keep an eye out on LIC's website (lic.co.nz/roadmap) and Facebook page for the latest features released into MINDA.



Take a closer look at wearable technology to help simplify the on-farm mating plan and improve cow health.

It's a Breeze:

Use a Cow Wearable, Eliminate the Bull & Go All-AB

Northland farmer Terence Brocx says there are only a few things he wouldn't operate a farm without: "A front-end loader, a motorbike, and now electronic drafting with our CowManager system."

The Brocx's say their ear-sensor technology system has been in place for just two seasons, but it's already resulting in better mating and repro results, together with improved herd health outcomes.

Terence and his wife Suzanne said it was pleasing to have experienced a smooth transition from their EZ Heat system to CowManager as they retained their 12-week, all-AB, mating approach throughout.

Herd management, health, and mating were the driving forces behind the investment, Suzanne said, and the new technology had delivered by offering a wider range of on-farm solutions.

When it came to AB, CowManager offered flexibility during mating, and selection of breeding choices was part of this, not least of which was the option of utilising Short Gestation Length semen, Suzanne said.

"CowManager gives us the ability to make more evidence-based decisions in real time," Suzanne said.

Results of the past two mating seasons had proven the system's value, with the windows of the expected calving dates being narrowed, alongside better submission rates and six week in-calf rates.

"We've been able to check potentially unwell cows way ahead of when they might present in a sicker state. Proactive health management means fewer down cows, fewer cow deaths, and has lowered the potential for production losses."

The system was less stressful for the farm team, and accuracy was on-point, Suzanne said.

The achilles heel of an all-AB approach was normally the 'fatigue factor' that can set in toward the end of mating; traditionally, picking heats and maintaining heat detection aids was increasingly harder for staff to maintain disciplines, and missed heats and higher not-in-calf rates were the ultimate price.

But the above risks had been virtually eliminated on their farm, Suzanne said.

Thanks to recent MINDA developments, CowManager, as well as Datamars Livestock Tru-Test, Afimilk, smaXtec and Allflex (via Protrack), integrate their devices with MINDA software,

allowing for two-way flow of information. Other suppliers within the wearables market are lining up to also integrate with MINDA software. Heat alerts that come from wearable devices can now be received as notifications within LIC's MINDA App, and more features and improvements to functionality and data flow are planned by LIC, with the aim of delivering greater insight into farmers' herds (and individual animals) via MINDA software.

Bay of Plenty farmer Brad Snowden, who has enabled his CowManager technology to integrate with his MINDA service, now receives heat and health notifications within his MINDA system.

Information detected by ear sensors allows Brad's data to be sent directly to his phone, which provides him with updates where ever he is.

The accuracy of the information was especially pleasing, Brad said, and had been beneficial in identifying silent heats which may have been missed in years gone by.

The new technology had resulted in positive changes to Brad's daily routines: "I can spend less time in the shed and more time focusing on the business."

For the past two mating seasons, Brad had gone all-AB on his 500-cow farm, having previously operated with a mating plan that was six weeks AB, followed by three weeks with the natural-mating bulls.

The technology was mitigating the effect of widespread staff shortages on-farm, and wearables were providing Brad with peace-of-mind.

He believed the wearables would be a good tool in helping to upskill junior and inexperienced staff, because if a heat was signalled by the system, tell-tale physical signs could be sought by the staff member to confirm the heat.



by James Mills, genetics product specialist

When THE HEAT-IS-ON get it RIGHT FIRST TIME

Although cow wearables are making heat detection easier for early-adopters of the technology, the vast majority of farms still rely on good staff processes, training, observation, skills, and heat detection aids to help identify standing heats. Here, James Mills, LIC genetics specialist, focuses on a few fundamentals of heat detection, and highlights the significant implications of missed heats.

Cows that calve early to artificial insemination are likely to provide the majority of replacements, and will therefore put more days (if not weeks) more milksolids in the vat the following year.

Successfully getting the herd in calf each season requires significant investment of time and resources, and it's therefore crucial that cows are inseminated inside their optimal breeding window - the period in which they're considered to be in 'standing heat', or oestrus.

DairyNZ statistics reveal 25% of seasonally-calving dairy herds are

Cost of a missed heat calculation:

(average milksolid kilograms per day = 1.85kg) x (lost days-in-milk due to later calving next season = 21 days) x (this season's forecast payout \$9.30)

1.85kg x 21days x \$9.30 = \$361 in potential lost revenue per missed heat.

Cost of 5 x missed heats = \$1805

Price of 500 x LIC heat patches = \$1300

likely to limit reproductive performance through errors in heat detection; most commonly, missed heats and invented heats.

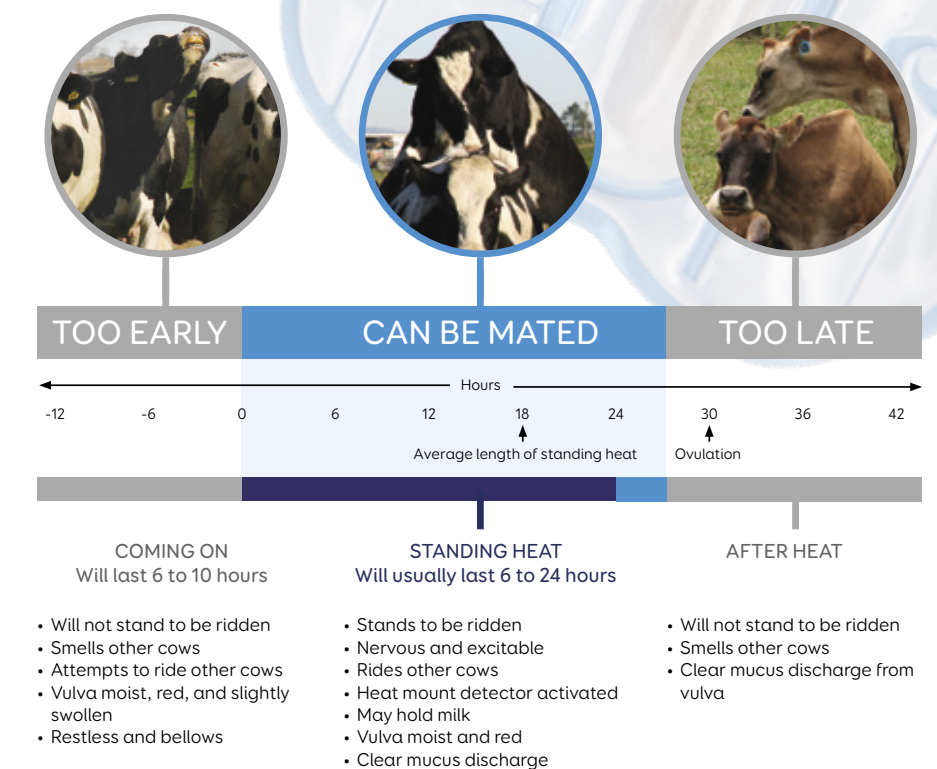
So before AB start-date, it's worth assessing the heat detection skills of the farm staff, and allowing time to induct new employees to preferred on-farm heat detection processes, upskilling staff as required.

Check you have a heat detection policy that's up-to-date, and provide the AB Technician with a copy. Policy templates and examples can be found on the Dairy NZ website.

Fundamentals to successful heat detection include careful planning, good observation, and effective use of detection aids. Understanding cow

behaviour, and identifying changes in behaviour (along with other signs) is critical. Good, accessible, record-keeping should also be a non-negotiable, along with thorough training of those responsible for heat detection (all staff should understand the ramifications of missed and invented heats).

Don't underestimate the value of paddock observation, and when complemented with heat detection aids, this is likely to greatly increase accuracy. Heat detection aids such as LIC's self-adhesive Heat Patch are easy to interpret, and with correct preparation and application aids will perform well and make for more-efficient drafting during the mating period.





by Katherine McNamara, LIC Diagnostics business manager

The chances of farmers keeping the best-possible replacements to breed and milk from just got better.

By tapping into LIC's recently-launched Genomic Evaluation Service for female animals, farmers can now drill down on an individual heifer's DNA information within its genomic evaluation, identifying trait supremacy and superior potential breeding and production.

This will make for the most accurate picture (ever!) of how the cow is likely to perform over its lifetime.

In essence, the science provides a significant boost to the reliability of the animal's predicted breeding and production values, making for better-quality herd management decisions - which can be made earlier the cow's life.

For example, the leading-edge technology allows the opportunity to breed from high genetic merit animals earlier, helping the farmer to increase the rate of on-farm genetic gain. The genomic evaluation service is also likely to be used as a key tool by farmers wanting to produce more milk from fewer cows.

Until now, animal evaluations have relied upon an assumption that a calf will receive an average set of genes from each parent.

In reality, however, new-borns will possess a random mix of genes from both parents - some genes will be better, but some genes will be worse.

By adding an animal's DNA information to its evaluation, the reliability of its breeding values increases from an average of 30-



WANT BETTER RESULTS? THEN BETTER YOUR ODDS: GET THE LOW-DOWN ON YOUR HEIFER'S GENES

35% (parent-average assumption) to approximately 60%.

The higher the reliability, the closer the breeding value will be to the animal's true genetic merit. The inclusion of the animal's genotype in its initial evaluation therefore provides a more-robust understanding of which genes the animal has inherited from its mother and father, and the animal's likely performance can be better-assessed prior to it entering the milking herd.

The table below shows how an animal's breeding values can deviate from its parent average once its DNA information is added to the evaluation.

In this case, the animal's DNA information indicates that, overall, she is significantly better than her parent average.

Some breeding values will go up and some will go down, but it's the increase in reliability that is key (note the difference in trait reliabilities in this example).

LIC uses the same technology to select elite young bulls for its breeding programme, and has spent a number of years developing and fine-tuning the genomic science; this includes investment of advanced in-house DNA technology, which now allows farmers to access the same benefits for their individual cows and herd.

GeneMark generates the genomic profiles required for the Genomic Evaluation Service (when samples are submitted for parentage).

Once the parentage has been completed, the animal's genotype information is transferred to the genomic evaluation team and the result uploaded to MINDA within the next *Animal Evaluation* run.

Actual results of a heifer calf:

Example of comparison between parent-average values vs. genomic evaluation values

Trait (genomic breeding worth or genomic breeding value, together with reliability)	Parent average (half-sire + half-dam)	Post genomic evaluation service (half-sire + half-dam + offspring's DNA information)
gBW/Reliability	278.5/32	373.2/51
Fat gBV/Reliability	43/35	54.5/52
Protein gBV/Reliability	29.8/35	30/52
Volume gBV/Reliability	561/36	513/53
Liveweight gBV/Reliability	24.4/26	11.7/45
Fertility gBV/Reliability	-1.4/34	-2.7/52
BCS gBV/Reliability	-0.03/29	0.01/43
Functional survival/Reliability	0.9/16	1.0/24

1,000,000!!

New Zealand farmers on the attack against Johne's Disease as LIC's laboratory surpasses 1 million samples!

JD testing demand is clearly increasing year-on-year, suggesting the prevalence (or at least the awareness) of the disease is at an all-time high. Testing through LIC has increased by more than 300 percent since 2016, with 70% of submitted samples coming from South Island farms.

Of the samples tested in the year to 31 May 2022, 30,500 Johne's-positive animals were identified, including subclinical cows that showed no physical sign of infection but were likely to be spreading the disease to other herd members.

Identifying subclinical animals, and removing them from the herd, is an important tool in the toolbox for managing JD on farm. JD is perhaps more prevalent on New

Zealand farms than many in the dairy industry might think.

Herds processed by LIC's Riverlea laboratory this season, 98% returned positive cases (i.e. just 2% of herds returned no JD-positive cows at the time of the test).

The JD test is done on herd test milk samples, with results categorising cows based on the level of JD antibodies detected in the milk. Categories include: i) high-positive; ii) positive; iii) suspect; iv) no antibodies detected.

LIC data suggests that farmers who have tested their herds routinely for a minimum of three seasons may have a lower prevalence of infection than farmers who have tested for the first time.

This indicates that the test, in conjunction with other on farm management practises, help successfully reduce the level of JD infection on farm.

JD is caused by the bacteria *Mycobacterium avium* subspecies *paratuberculosis* (MAP), and is a chronic, contagious disease that affects ruminant animals.

Symptoms include wasting and diarrhoea, which can eventually lead to death.

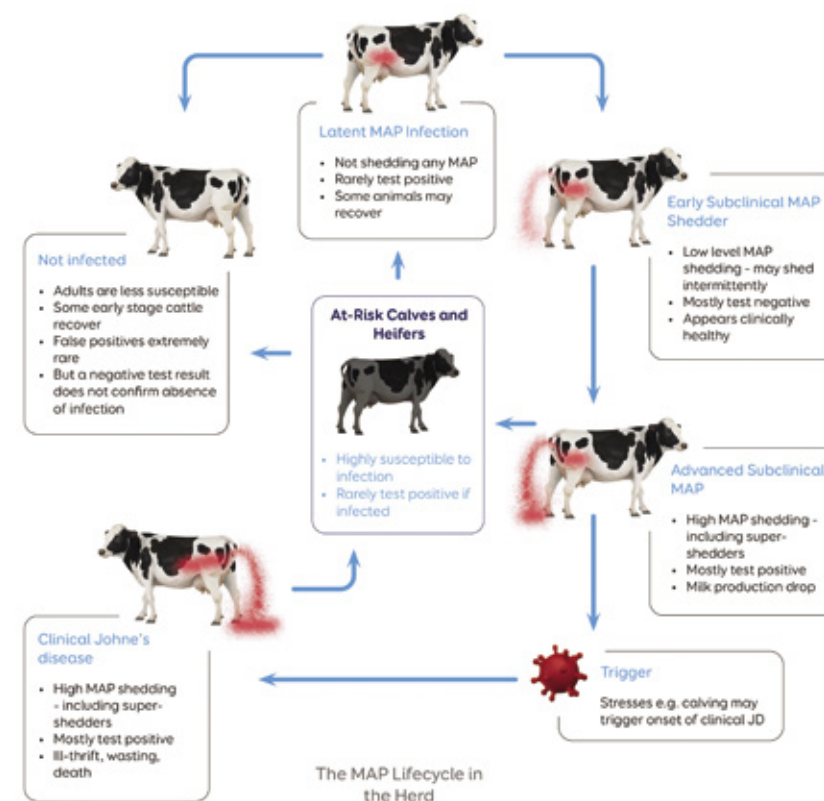
MAP is spread via faecal matter and animals become infected by ingesting faecal contaminated water or food, or even during birth. JD is notoriously difficult to diagnose in the early stages of infection and an animal may not show clinical symptoms for years.

Johne's Disease Fact Box

- Johne's bacteria are commonly spread from the dam or other adult cows to the calf, usually through faeces, colostrum, or milk.
- The bacteria are robust and can survive for up to 18 months in the environment.
- Keeping uninfected animals separate from potentially infected herd mates is important.
- Diseased animals should be removed from the herd as soon as possible and new animals coming to the farm should be tested to show they are free of infection.
- Due to the protracted nature of the subclinical stages of Johne's disease infection, the full effect of changed management practices that reduce transmission will only be seen after several years.

DairyNZ website

Diagram showing the MAP bacteria lifecycle within the herd



Reproductive Performance & Changing Industry Preferences



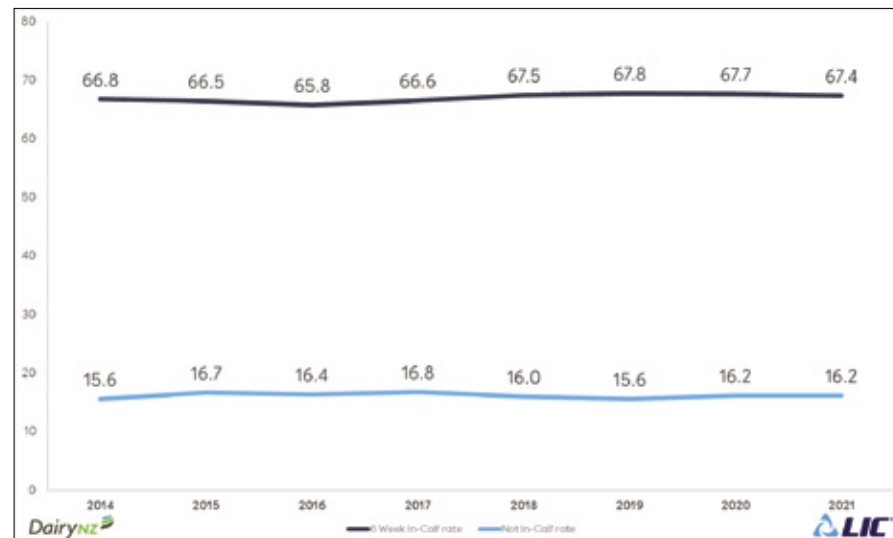
Jair Mandriaza, LIC senior reproduction solutions advisor

In this article, LIC repro advisor Jair Mandriaza offers his observations and insights based on latest reproduction data, which he breaks down from a national to a regional level:

How's your farm doing compared to the regional average?

Reproductive performance is always a hot topic among farmers and LIC's repro experts consistently get asked whether national performance is getting better or worse.

What we can say is that, at a national and regional level, there



is very little variation evident in reproductive performance from year-to-year.

At farm level, however, large variations can happen, but even that is most-definitely not 'the norm'.

The 2021 season national results are no different: There's been a negligible drop in performance of the 6 week in-calf rate and the not-in-calf rate is unchanged, as shown in the graph above:

At first, it could be said nothing has changed, but the numbers are interesting given the change in on-farm purchases, especially for AB products; certainly at LIC there's been a rapid migration by farmers from traditional to premium products, and the mix of AB products sold is significantly

different from that of a few years ago.

The graph below shows the variation that exists between regions and how they compare to national average for the 2021 season. In essence, ranges between regions are not too different to the national average.

At the individual farm level, repro data suggests there will be 'good' and 'not so good' performers within all regions.

At a national level there is a 20% variation in the 6 week in-calf rate between the average of the top quartile and the average of the bottom quartile.

Another key emerging trend, the impact of which will be watched with keen interest, is the rise of wearables technology. It's early

days, but data from the limited number of herds that are known to be utilising wearables technology suggests those farms have the same average 6 week in-calf rate, and not in-calf rate, as the rest of the herds in the country.

These results are not surprising, as there are a number key variables that affect performance (as outlined by DairyNZ's InCalf programme). Wearables are merely a tool farmers can use to help manage cows on a daily basis, but it's not expected they will deliver any form of 'silver bullet' that will lift reproductive performance.

Also a hot topic is speculation about the influence that variable milking regimes (such as 3in2, 10in7 and Once-a-Day) might have on reproductive performance.

Anecdotal evidence is that for some farms, moving away from the traditional twice a day (TAD) milking in the early part of the season to 3in2 or 10in7 do present reproductive performance gains. However, because there is not yet any reliable record of what milking regime is being adopted, together with the 'how' and 'when', it's hard to pinpoint details about the extent of repro gains.

However, what has been investigated with more accuracy are OAD herds, and it is known these herds, on average, achieve top-quartile performance in terms of repro.

The difficulty in getting more-accurate insights lies in the fact farmers often change milking routines throughout the season, and these are not frequently tracked or formally recorded.

Research shows that only 45% of herds do traditional TAD milking all season, meaning variable milking regimes are adopted by the majority of farmers throughout the country, and throughout the season.

Any Other Trends?

According to Steve Forsman, LIC Animal Performance Manager, Body

Condition Score (BCS) recording has been growing exponentially over recent years.

"Since the introduction of the BCS scoring function to the MINDA App, we've seen the number of BCS events jump from about 800,000 in 2016 to more than 4 million this year, Steve says.

"We know that BCS and animal health are two of the biggest determinants on animal reproduction... so this is good news, because unless you're recording BCS at the individual level, you can't analyse the impact of the BCS on repro at an animal level."

However, Steve said BCS score averages were lower than they had been for some time.

"If you score your individual cows now, at least you'll be able to analyse what impact this might have on your repro in the coming season.

"Cows calving at one-point lower than ideal (5.0 is ideal for mature cows; 5.5 ideal for 2- and 3-year-olds) are likely to take 8-10 days longer to start cycling.

The implications of a later cycling cow was considerable: "It'll result in a later calving date the following year, and the cow will probably produce approximately 15 kg fewer milksolids during the following season's lactation."



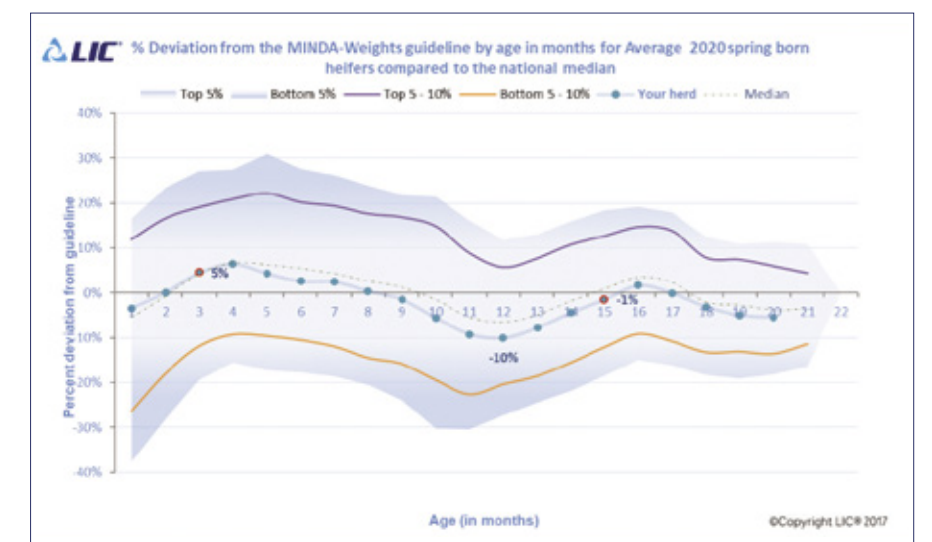
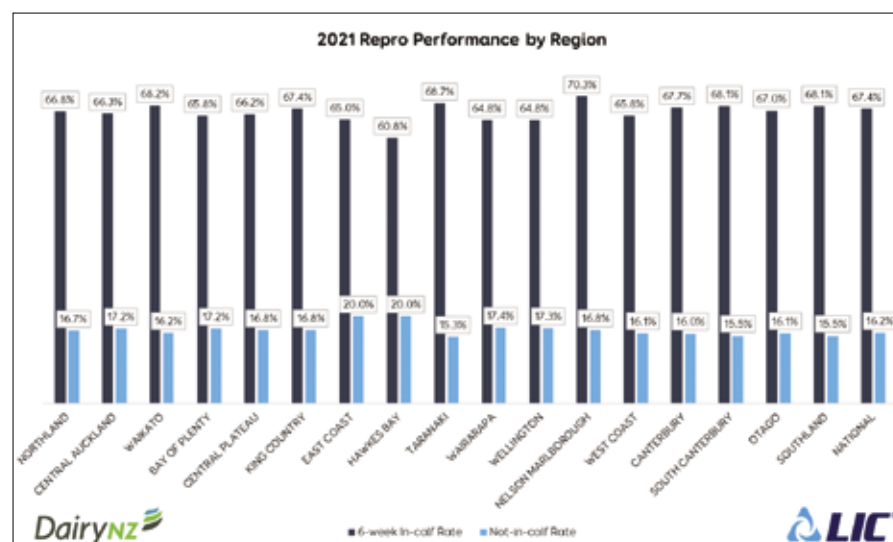
Steve Forsman, LIC animal performance manager

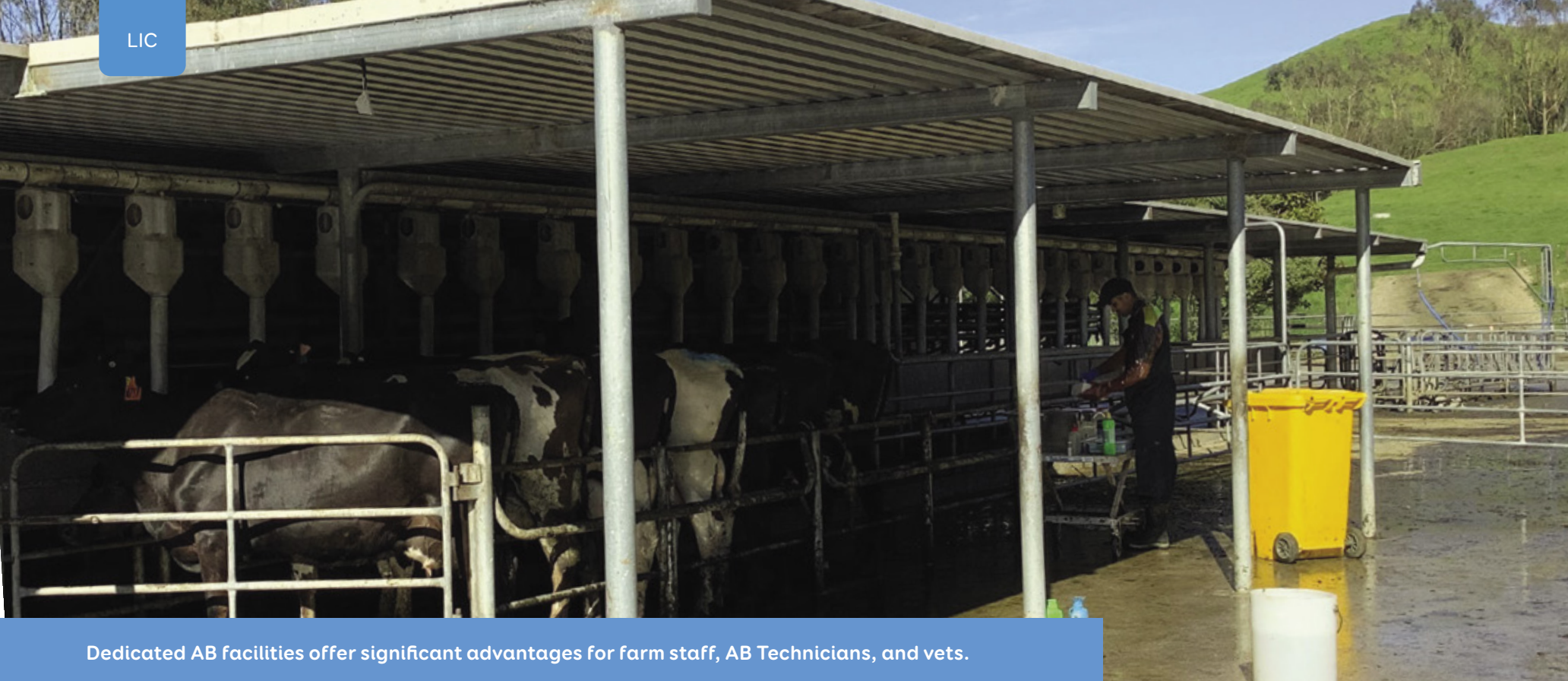
Meanwhile, Steve said the number of heifer liveweight events being loaded in to MINDA also continued to grow.

Data from the 2020-born cohort of heifer weights showed evidence of mean and median growth patterns tracking away from one another, with the mean pattern dipping well below the median (the first time in six years).

Steve said this implied there was, nationally, some poorly-grown heifers dragging the line down.

"A few extreme cases have impacted the mean, which has dropped that average winter dip from 7-8% (below the guideline) to 10% below. Averages also show the PSM target is being missed for the first time in six years; it has consistently been 1% above the guideline at 15 months."





Dedicated AB facilities offer significant advantages for farm staff, AB Technicians, and vets.

Farmers prioritise AB tech safety by upgrading on-farm facilities ready for Spring

With new standards for AB facilities on the horizon, farmers across the country are jumping on board to improve their on-farm facilities well ahead of time.

Dave Hale, LIC's national artificial breeding manager, says he's impressed with the support farmers are showing for LIC's improved AB facility standards.

These standards will see the end of AB Technicians having to work from the pit of herringbone sheds.

The new standards provide farmers with a phased timeline to provide a dedicated AB facility, starting with the removal of LIC's AB technician service from trolleys by May 2023.

Hale says he appreciates it's a big shift in mindset for a portion of farmers but backs the need for change.

"AB technicians have been inseminating cows in herringbone sheds for years, but the reality is those sheds are designed for

milking cows, not performing artificial breeding. Health and safety standards and expectations of working environments have evolved considerably and what used to be considered ok, is simply not ok anymore.

"The health and safety of AB technicians on-farm is a responsibility shared by LIC and farmers and we need to work together to provide a work environment that's safe and fit for purpose so our technicians can focus solely on their job of getting cows in-calf."

Hale says LIC's AB operations team is working closely with farmers to help them find the most cost-effective solution for their farm.

The AB operations team is aiming to make contact with all 1570 farmers who provide trolleys in their herringbone sheds for their LIC AB technician.

"So far we've spoken to nearly 700 farmers and are visiting all farms

where farmers are asking for help with design and implementation. These conversations allow us to discuss any questions a farmer might have, weigh up their options for providing a dedicated AB facility, and ultimately decide on a solution."

After visiting a number of farmers to discuss the standards, Hale says the cost of building a dedicated AB facility is often the first topic of discussion.

"For a lot of farmers, the cost is often considerably less than first thought. Coupled with the fact a dedicated AB facility can be used for multiple purposes, a lot of farmers are deciding to simply get on with it and build new facilities now so that they're in place before spring which is really pleasing to see."

Hale says LIC's 860 strong team of AB technicians are supportive of the change and are looking forward to working in more standardised, fit-for-purpose, safer environment.

The timeline for moving to dedicated AB facilities

- May 2023 - LIC's AB Technician service will not be offered if required to work from the pit of a herringbone shed on a trolley.
- May 2025 - LIC's AB Technician service will not be offered if required to work from the pit of a herringbone shed on a platform.

LIC's AB Technician service will only be supplied to farms with compliant dedicated AB facilities, this includes compliant platforms in rotary sheds.



MAKING MATING A BREEZE

On his Te Puke farm Luther Siemelink milks 400 cows in a 30-aside herringbone.

Having previously sharemilked on a South Waikato farm, he's familiar with the pitfalls of trying to apply heat detection aids, and the difficulties an AB Technician can encounter, inside herringbone sheds:

"When it came to mating time we used to do it by trolley, which was only good enough to do half-a-dozen cows, then shift it, then half-a-dozen, then shift it.

"The owners were reluctant to upgrade, so I thought as soon as I own my farm, that's what I'm going to do, I'll install dedicated facilities, and I'm not going to muck around."

So when he bought his farm three years ago, Luther estimates he spent \$2000 installing a safe AB Facility on the edge of his shed:

"We did most of the work ourselves as soon as we bought the farm - so that's the cost of materials.

"The facility makes a big difference. One of the main reasons we wanted it was because we do 100% AB and we had in-shed feeding, so we knew how tedious it was trying to use a trolley for 10 weeks or so.

As far as I'm concerned, the more comfortable the cows are the more comfortable the technician is, so the repro results are going to be that little bit better."

Applying and maintaining heat detection aids was also a streamlined process: "We can fit 15-20 cows in at a time, just row them up and comfortably apply them."

As well as a significantly better set-up in terms of health and safety for AB Technicians, Luther said other on-site visitors such as vets appreciated the dedicated facility:



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