

Working to **secure your future**

Issue 13 2024

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Producing beef calves from the dairy herd

LIC's Aiden Cunningham reviews what the latest action in the beef market means for dairy producers trying to add value to their beef calves.

“ Good reproductive performance is the foundation that herd improvement is based upon. And it's that foundation that has allowed Irish farmers to use increasing amounts of sexed semen with confidence.

The use of sexed semen has helped to produce the best possible replacements from our top cows and has also provided a great opportunity to inseminate our lowest merit cows with beef semen.

These two actions prevent us passing those lower merit genetics on to the next generation while, at the same time, generating a higher value beef calf. This is a real WIN-WIN.

Over the past 100 years, most of the work regarding herd improvement has been focused on the dairy cow and improving dairy production. But with new

tools like genomics and sexed semen, we've seen an acceleration of the genetic gain being made.

The same effort, skill and technology are now being applied in equal measure to beef genetics that will be used on the dairy herd.

Paul Charteris, LIC's beef genetics product lead, is targeting bulls that provide solutions to both dairy farmers and finishers. "We're serious about the beef genetics we use on our dairy cows. We want the best genetic merit bulls, so we're partnering with top NZ breeders to make sure their breeding programmes are aligned with what dairy farmers and beef finishers are looking for," he says.

Initiatives such as the dairy progeny test, which is co-funded by LIC, are providing very robust data and feedback for how well the offspring from these beef bulls



Dairy x Angus calves

perform with New Zealand crossbred cows - and the results are encouraging.

At the recent Positive Farmers Conference, Padraig French from Teagasc, talked about dairy to beef in an Irish context. After analysing last year's calf sales through Cork Marts, he clearly showed that breed and age of dairy bull calves had a negligible impact on price.

Weight was the biggest factor when it came to price paid, with every additional 1kg adding approximately €5 of value. Up until now, beef farmers have had to





rely on breed as a proxy for potential value, but with tools such as Commercial Beef Value (CBV), and genomically verified sires for dairy and beef, farmers have access to much more accurate data and have better predictors of future value at their fingertips.

While dairy farmers have been experts in picking the ideal team of dairy bulls for their herds, they are now being asked to become experts in picking beef bulls for the same herds.

Long held beliefs about breeds or faith in stock bulls have been challenged and are having to be amended, taking into account the steady stream of data that's been emerging in the past number of years.

Whether this information is coming from the dairy beef progeny testing in NZ, or the work that's happening at Tully in Ireland, the data is clear. The bull itself matters more than the breed.

While we are still using and selecting easy calving and short gestation beef bulls, we also need to keep the farmers that are buying and finishing these cattle in mind. We need to look at the traits that dairy farmers don't necessarily see, but that are still very important.

These include, for example, growth rates, carcass weights and weights as both a yearling and at two years of age.

If we want to build trust between the farmers bidding for and buying our stock, as well as those finishing them, we as dairy farmers breeding the stock need to be selecting beef bulls that will deliver the desired results consistently.

We must move away from stock bulls as soon as possible because, much like the best dairy bulls are found in an AI straw, the same rings true for beef bulls.

While using stock bulls is a convenient choice especially at the end of AI, stock

bulls are animals that often have very little information available about them and at the same time they tend to deliver inconsistent results.

When finishers are not getting a consistent product, they'll end up leaving the market. The onus is on us, as dairy farmers, to produce a consistent product.

The good news here is that there's been a large amount of work and resource put into dairy beef.

LIC has partnered with the likes of the Rissington Cattle Company in the Hawke's Bay, who've been working on breeding elite beef bulls since the 1980s, as well as Kakahu Charolais, both of which have proven to be excellent options for dairy farmers. Both mark calves and produce excellent weights at 200 and 400 days respectively, as well as good carcass weights. LIC also works with Shrimpton's Hill Herefords, a business that has really proved itself as



Herefords

an excellent short gestation option.

No one breed of beef bull is the best, what's important is to use the right team of beef bulls. Bulls with a shorter gestation are best used at the end of the breeding period. Those boasting lower birth weights and easier calving are most effective when paired with younger animals, and beef bulls with superior carcass traits are most effectively utilised with some of our older cows.

With the use of sexed dairy plus sexed beef straws, there's great opportunity for dairy farmers to increase genetic gain and improve the value and quality of beef animals being supplied to beef farmers, without having to change the type of cow they are milking.

That's why it's a win-win for beef farmers, because they'll get a higher quality calf, growing quicker and finishing at a higher carcass weight.



Kakahu Milestone



Breeding for lower methane emitting dairy animals

During a recent trip to Ireland, LIC senior scientist Lorna McNaughton took time to share with LIC customers, the latest updates on the methane trial work being done in New Zealand. Her visit also included valuable discussions at Moorepark, to exchange ideas with Teagasc regarding current work in this space.

“Greenhouse gas emissions are a big issue for small, agriculture focused nations like Ireland and New Zealand. We know we can breed for a variety of traits, but is genetics a tool that can help farmers reduce methane emissions? The answer appears to be, yes.

Every year since 2021, the future Artificial Breeding sires at LIC and CRV have spent 40 days inside a barn being measured. This work is funded by the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC).

The research facilities at Tully Co. Kildare ICBF's bull progeny performance test station, formed the basis of the New Zealand trial design, having been judged as a superior method compared to those being used elsewhere. Measuring the bulls themselves is an option for a trait like methane, an approach not available for traits like milk production.

Methane is a challenging trait to measure, requiring expensive specialist equipment, but there's an added complication. Given the animals are consuming the same type of feed, one of the biggest sources of variation in methane production is the amount of feed consumed. Ideally, feed intake should be measured alongside methane – a challenge in grazing animals.

This is why we measure methane in a barn, so individual animal feed intakes

can also be measured. We need to ensure that when we select for reduced methane we are not simply selecting for reduced intake. Every mouthful of feed is measured.

Methane emissions are measured when the bulls visit a GreenFeed machine, up to six times per day. Methane emissions vary over the day, depending on when feed is consumed, making it important to ensure that visits to the GreenFeed are spread over the day.

Genetics is a numbers game – the more data we have, the better. Each year we have to measure an additional 250 – 300 animals. With over 800 animals

measured so far, we have found there is genetic variation (heritability) in methane emissions. The trait we are looking at is methane emissions, but adjusted for a constant level of feed intake.

Essentially, this means we want to select the animals that have the lowest emissions for each unit of feed eaten. The current estimated heritability is 0.1. This is similar to the results from Tully, with ICBF reporting that 11% of the difference in methane emissions was due to genetic differences (www.icbf.com/methane/).

We know that there is genetic variation in methane in our growing young bulls, but does this translate into daughters who produce less methane?

Phase 2 is the 'Daughter Validation Trial'. The top 25 and bottom 25 bulls with semen available were selected based on their methane production. A single 2000 cow herd was used for





inseminations in October 2022. 490 heifer calves were born between July and September 2023.

We are waiting for DNA results to confirm they all have trial sires. A science programme is planned from birth to the end of first lactation.

1. July 2023 onwards: Monitor growth and development.
2. May-2024: Measure methane and feed intake at LIC's Chudleigh farm in a barn.
3. July 2025: First lactation – milk production, reproduction, and methane.

As we look ahead to the future, both we and many others within New Zealand and around the world, are exploring ways to measure methane from an increased number of animals whilst seeking more cost-effective measurement methods to do this.

Our goal would be to witness hundreds or even thousands of data points flowing in annually, potentially facilitated via a methane sniffer installed in the milking parlour. The use of methane sniffers in milking robots is already well-established and being utilised in countries such as the Netherlands and Denmark.



Dairy bull choices for 2024 for Irish customers

Aiden Cunningham highlights three key New Zealand studs, where farmers are already reaping the rewards of choosing Angus, Charolais or Hereford sires.

RISSINGTON - ANGUS

Rissington has been LIC Ireland's SGL Angus supplier for the past few years. During this time a large number of calves have since hit the ground in Ireland, as these bulls have proven to be very popular.

The Rissington Cattle Company, with over 140 years farming in the Hawke's Bay, specialises in producing high-quality carcasses. They place a strong emphasis on eye muscle area (muscling) and intramuscular fat (marbling) of their beef, while also meticulously recording the feed efficiency of their bulls.

In the 1980s, they began importing embryos from Canada and have since maintained a steadfast commitment



to importing superior genetics from around the globe. Presently, they work closely with Leachman of Colorado on one of the world's largest cross-breed cattle evaluation systems, which boasts a database of over 1 million animals from North America, Australia, United Kingdom, France and New Zealand. Rissington Angus also offer the advantages of being homozygous polled, with low birthweights and short gestation periods.

KAKAHU - CHAROLAIS

In 2023, LIC Ireland introduced Kakahu Charolais as a new option for Irish farmers, inspired by their impressive offspring observed on NZ farms the previous October. They quickly gained popularity last spring, and now their calves are being born.

Early reports from our farmers suggest that there are cows calving up to 14 days earlier than their expected calving dates.

These bulls are a great option for easy calving and colour-marking, while also enhancing muscle and conformation



to dairy beef carcasses. They are a popular choice as a terminal sire in commercial beef operations in NZ, making them a well-proven option for dairy-to-beef. Additionally, all LIC Charolais bulls are homozygous polled, providing further benefits.

SHRIMPTON'S HILL - HEREFORD

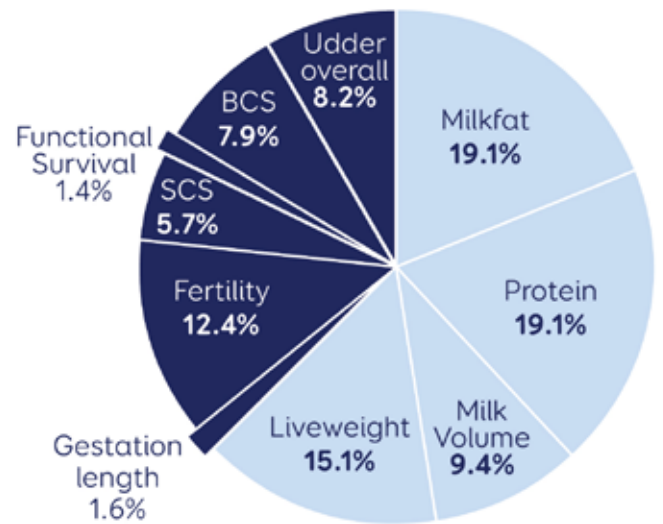
The Shrimpton's Hill short gestation breeding programme, established in 2001, focuses on selecting bulls specifically for the dairy semen markets. In the 2019 season, they achieved a significant milestone by selling their 1 millionth straw of Hereford semen, becoming the first Hereford stud in the world to achieve this.

Shrimpton's Hill stands as the largest supplier of beef genetics to the national dairy herd in New Zealand, siring well over 100,000 calves annually. In Ireland, these bulls have been impressing farmers with calves arriving approximately 10 days early, with very easy calving, resulting in highly marketable offspring. Importantly, the cows are spending more days in milk.



December 2023 Animal Evaluation Update

The December 2023 New Zealand Animal Evaluation Ltd (NZAEL) implemented further enhancements to the national dairy animal evaluation system. These included the implementation of a conception-based fertility model and an update of the economic values (EV) for Breeding Worth (BW).



Effective emphasis on individual traits within BW



Joyce Voogt

The fertility model change has resulted in re-ranking bulls on fertility BV; the result is a more accurate prediction of true fertility independent of gestation length.

The EV update reflects changes to New Zealand farm costs and revenue, and the contribution of the ten traits in BW to the efficiency of conversion of feed to profit for the dairy farmer.

Fertility

The new conception-based fertility model moves the focus from calving date to conception date. Calving and mating information is used to back-calculate conception dates, accounting for gestation length in the process.

The new trait definition is expressed as 'the percentage of cows confirmed pregnant within the first 42 days (six weeks) of a herd's mating period', known as Pregnancy Rate 42, (PR42). PR42 aligns with the widely acknowledged NZ and Australian reproductive performance metric of 6-week in-calf rate.

Fertility breeding values are estimated using PR42 data and the predictor traits of CSD0, (calving date relative to planned start of calving in first calvers), and PM21, (21-day submission rates).

Along with the move to a conception-based fertility model, there is increased focus on data quality, with new penalties and filters being applied to the data to better reflect reproductive performance of animals. For example, penalties are applied to fertility culls and roll-over cows, while records are filtered out for embryo transfer matings and cows that are culled for non-fertility reasons before the planned start of mating.

On average, the changes to fertility saw an increase in fertility BV across all major breed groups, (see Figure 1).

Jersey bulls increased by an average of +4, KiwiCross® bulls +3 and Holstein Friesian +1.5 fertility BV units.



Jayden Calder

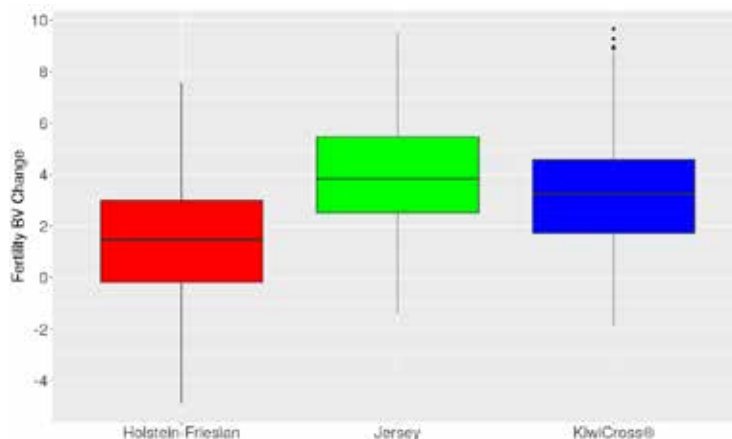


Figure 1: Average change in fertility BV by breed group for all LIC bulls born 2017-2022. LIC genomic evaluation model outputs.

Source: LIC, 2024

Economic Values Update

The economic values that are used to calculate Breeding Worth (BW) are routinely updated in December to reflect changes to revenue and on-farm costs. In December 2023, NZAEL also revised the underlying economic model behind the National Breeding Objective (NBO) for the purpose of simplification and accurate prediction of feed costs according to the milk price.

The most significant change to the economic values for 2024 is the value of protein relative to fat for the Breeding Worth index. The economic value for protein has increased by 31%, driven by a shift in the five year rolling of value-component ratio in favour of protein.

The higher value of protein in BW has resulted in its trait emphasis in BW now sitting at parity with milkfat, (see Figure 2, The effective emphasis of the traits in BW 2024).

There is re-ranking by breed, with Holstein Friesian and Holstein Friesian x Jersey cross animals benefitting from the extra \$1.62 in protein EV, in combination with their higher genetic merit for protein relative to Jersey animals.

Liveweight and body condition score economic values have increased with the update and model simplification. Fertility has a new economic value for the conception-based trait, while the gestation length economic value is separated out from fertility and reflects the additional profit gained from earlier calving. The economic contribution of GL in BW is capped at -5 days GL BV to moderate genetic gain for this highly heritable trait.

Table 1: 2022 vs 2024 economic values for Breeding Worth and 5-year average VCR/milk price change

Trait	2022 Economic Values	2024 Economic Values	% Change
Fat	5.18	4.85	-6%
Protein	5.21	6.83	31%
Volume	-0.0951	-0.1	5%
Liveweight	-1.38	-1.59	15%
Somatic Cell Score	-42.89	-46.21	8%
Fertility	6.244	5.77	-8%
Functional Survival	2.65	1.88	-29%
Body Condition Score	116.94	164.09	40%
Gestation Length	-0.822	-1.89	130%
5-year average VCR	1.14	0.91	-20%
5-year average MP	\$7.08	\$8.37	+18%

*Udder overall not displayed as the EV is non-linear

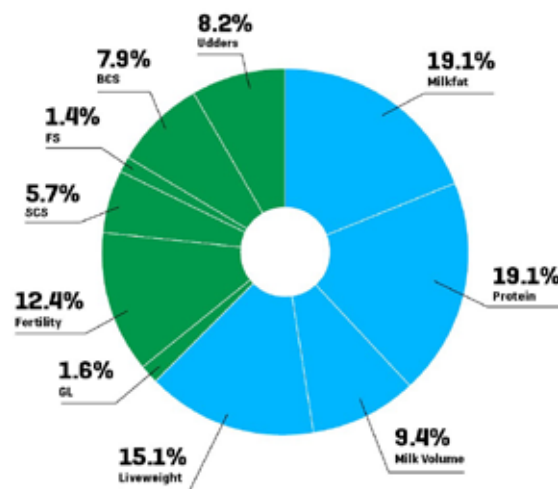


Figure 2.
Effective emphasis of traits in BW 2024.
Source NZAEL,
Accessed 08/02/2024

Mairead Hayes talks about her time at powerful Dairy Women Ireland conference

I had the pleasure of attending the Dairy Women Ireland (DWI) conference on November 25, 2023 in Killashee, Co. Kildare, where LIC was a sponsor of the event.

On arrival, there was a very friendly, uplifting and positive atmosphere, where everyone mingled over a coffee.

The day kicked off with Ciara Lynch, the outgoing president, welcoming everyone and Ann Fogarty from Dairygold delivering the opening address.

The first discussion was chaired by Aidan Brennan. It was a very raw and open discussion featuring two LIC customers: Elaine and Patrick Hickey from Tang, Westmeath and Siobhan and Mitchell Hayes from Blarney, Cork along with Anna Daly who represented Tirlan as the member relations manager. Siobhan and Elaine spoke about their individual roles on farm and the support they provide to ensure its smooth operation. They also spoke about the role of being a mother, wife, daughter-in-law, working both on and off the farm, serving as a mental supporter and homemaker.

Barry Murphy from FDC and Susan Maher from Bank of Ireland shared insights on accounting policy options.

The fabulous Laura Dowling offered a fun and informative talk on women's health & wellbeing.

After lunch, the afternoon session was divided into four groups, allowing attendees to select topics of personal interest.

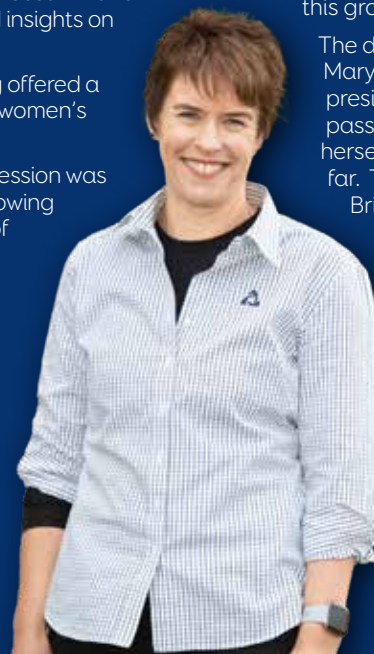
The options were:

1. Antimicrobial resistance – the silent pandemic – how on-farm practices impact human health.
2. So you married into a dairy farm – what now?
3. Family farm succession.
4. Create the life you deserve.

I would've happily attended any of the above topics but, I opted for the "Create the life you deserve" discussion group. Sarah Murphy, a Life and Empowering coach, delivered a superb presentation and there was plenty of interaction from the group. We all went away with life tips to help us in times of stress. Beatrix Killeen from Galway was the support for this group from DWI.

The day concluded with Mary Kinston, the incoming president, delivering a passionate introduction of herself and her journey thus far. The day closed off with Brian Rushe giving the closing address.

Overall, it was a splendid day. I have made friends and it was a great day for networking. I would highly recommend any woman in the dairy industry to contact this support group, while the conference was a very enjoyable and informative day out.



Travel when you can, young or old

Sarah Armstrong recommends travelling to all of the Irish farming community - young and old. Lucky enough to have enjoyed spells in both New Zealand and the United States, she is now busy putting her experience to good use as she helps to run her home farm in Cavan as well as teaching students in her local Teagasc agricultural college.

“ Like many young people living in rural Ireland, I’ve grown up in a farming environment. In particular, I’ve been surrounded by livestock, and it’s here that, from a very young age, my love for this life started.

My grandfather Robert was a dairy farmer, having a herd of primarily British Friesian cows with some Shorthorns. Alongside this was a pedigree herd of Herefords. We had dairy cows on our home farm for a short period, later converting to beef farming. At the moment we have a herd of mainly Limousin cross and Simmental cross cows. We’ve also re-established our Hereford herd, breeding mainly polled Hereford bulls and heifers.

After finishing school, I decided to pursue a Bachelor of Honours degree in sustainable agriculture at Dundalk Institute of Technology and Ballyhaise Agricultural College. It was during these four years that I gained a great deal of knowledge and different skills, especially within the dairy sector.

My interest in dairy originally stemmed from my part-time job as a relief milker. It’s a sector that’s seen a great deal of expansion in Ireland since milk quotas were abolished in 2015. It’s also given rise to the concerns for the sustainability of the sector and how as a community we can work together to overcome future challenges.



During my degree course I was given two placement opportunities.

In my second year, I spent nine weeks on a local dairy farm in Cavan. This was a low-cost New Zealand style system, with a herd of primarily Jersey cross cows. The emphasis was put on grass growth and its management.

All cows were served to beef bulls including Angus, Belted Galloway and Speckle Park. The calves were sold to local beef farmers in the area. Here I had the chance to build on my milking and calf rearing skills. I also got a great insight into the reality that low cost systems can be run as efficiently and as profitably as high cost systems.

In my third year I decided to travel abroad. I secured a placement at Drumgoon Dairy, an Irish owned farm in South Dakota in America. The farm had a herd of 6500 high yielding cows, milked three times a day in two milking sheds with an additional 20 DeLaval Robots. The herd consisted of purebred Holstein and Jersey, Jersey crossbreds, Norwegian Red and Brown Swiss cows.

During this time I gained great experience in all aspects of dairy, in particular in the care of the new born calf and cows. Replacements were bred from the best cows, and the remainder were bred to beef bulls.

The majority of these were Angus calves, all of which were always snapped up by local beef farmers in the area. A trial which I found very interesting involved breeding cows with pedigree Angus embryos. These calves were then sold back to the AI company running the trial.

After completing my final year exams, I wasn’t sure of which route to take. Ultimately I decided to travel to New Zealand for four months. Farming in Taranaki, Maolla Farms is owned by the Lynskey family.

Cows are outside 365 days of the year and 90% of their diet is home grown grass and





silage. On the farm, the cows are crossbred and are very high in the Breeding Worth system, ranking in the top 2%. At present, 1200 cows are being milked once a day through a 60 bail rotary. As the calf rearer, I was responsible for the day-to-day care of over 450 replacement heifer calves.

I was pleased to find that New Zealand was very comparable to home in all aspects: the people, livestock and climate, although there's not too many days in Ireland that you would get sunburnt!

This similarity is of great benefit to farmers on both sides of the world, and I found this experience instrumental in building on my own knowledge of the dairy industry. I was also able to provide some of my own insights from agriculture at home.

This experience provided me with a great deal of insight into the running of an efficient, profitable, low cost dairy farm, with an emphasis on producing high quality grass and milk.

There's a lot that Irish farmers can learn from New Zealand, but I also believe there's just as much that New Zealand farmers can learn from Ireland.

The dairy calf to beef sector is a growing link between dairy and beef farmers.

Producing dairy beef calves that are valuable to the beef sector is an important role of dairy producers. It's crucial that dairy farms are able to identify the needs of the beef sector when selecting beef sires for their herds.

But they must also consider options outside of the usual scope for dairy beef breeding. The sustainability of calf production relies solely on the success of dairy calf moving into beef systems, so it's critical that farms continue to research and implement systems that work for this sector.

Many people say their biggest regret was never travelling, and it's true...

Travelling gives you a great opportunity to see past your local area, and also helps with your self-development.

Of course it can be daunting moving to the other side of the world, leaving friends and family behind, but the life lessons you learn

will have an instrumental part to play in your future.

Five years ago I never dreamt I'd be involved in the dairy sector, never mind travel to the other side of the world. But it's an experience that I'll always reflect on, and maybe even repeat. I'm very grateful to the farmers who gave up their time to train me and share some of their wisdom.

And for anybody, young or old, looking for a new challenge or skill, all you have to do is ask out there. I spent two months, learning to milk, unpaid in my free time, purely to secure a part-time job during college, but this has led to so much more than a pay cheque at the end of the week.

Farming is not just for people who are born into the industry, but it's for anybody who puts their minds to it. As the saying goes, it's not just a job it's a lifestyle."



Slick solutions:

Research advances in LIC's heat tolerance programme

With climate change increasingly impacting dairy farming in New Zealand, Kiwi scientists are advancing their quest to breed cows that are more tolerant to heat to improve animal welfare and productivity.



Having identified the 'slick' variation that gives cows shorter coats and better heat tolerance, Livestock

Improvement Corporation (LIC) scientists are now embarking on the next stage of the research; investigating how these slick-coated animals fare in winter.

"It's a balancing act," says LIC Chief Scientist Richard Spelman. "While heat tolerance is crucial, we cannot neglect the animals' ability to withstand colder temperatures. Before we offer heat tolerant genetics to farmers, we need to understand the slick animals' response to cold conditions, from the more-tropical north of New Zealand to the colder south."

The cold sensitivity trials involve exposing slick and non-slick calves to cooler temperatures in a controlled setting, replicating the conditions they would naturally encounter when born during a typical New Zealand winter. The animals' core body temperature is recorded and compared during the trial and again once they've re-acclimated afterwards.

Preliminary results show slick calves exhibit similar responses to that of non-slick calves, which suggests that animals with the slick gene do not have compromised welfare in cold conditions.

Spelman comments: "These results are promising for the future suitability of the slick variation across New Zealand and are another step towards us being able

to offer farmers the ability to breed heat tolerant cows in the near future."

These cold sensitivity trials are undertaken at LIC's Innovation Farm in Waikato, New Zealand, and carried out in collaboration with Lincoln University. Lincoln researchers are conducting similar observational studies on calves exposed to natural temperature variations at their South Island campus.

The trials come under LIC's wider heat tolerance research - initiated by LIC in 2014 when its scientists first discovered the slick gene. The research also includes a slick breeding programme, and separately, a study to better understand heat stress on animals and the on-farm impacts.

Cows generally experience heat stress on days exceeding 22°C with 75% humidity. This is a concern as NIWA (National Institute of Water and Atmospheric Research) predicts that by the end of the century, the frequency of 'hot days' (maximum temperatures at least 25°C) doubles under modest modelling scenarios. This stress has significant implications for dairy animal welfare, fertility, and milk production, causing cows to seek shade, drink more, and eat less.

The slick breeding programme initially crossed Senepol, a Caribbean beef breed carrier of the slick gene, with New Zealand dairy cattle. These animals now consist of approximately 3% Senepol



and 97% New Zealand dairy and carry the slick variation. Researchers assess the offspring's milk production and body condition score, contrasting them with non-slick cows.

The programme has found cows with the slick variation have lower rumen temperatures (0.5-1.0°C) compared to non-slick cows under certain temperature and humidity conditions. Spelman said although a one-degree temperature decrease doesn't sound significant, it goes a long way to helping cows feel cooler overall.

"Our goal is to provide farmers with heat tolerant genetics that equip these cows for the challenges of a changing climate, while ensuring they have the high genetic merit and milk production that is expected of New Zealand dairy cows," says Spelman.

Spelman said the next step is to undertake a round of mating this spring, pairing slick bulls with high genetic merit cows across the country. "Assuming progress continues as planned, Kiwi farmers will be able to breed heat tolerant cows by 2029."

The heat tolerance research is part of LIC's focus to help Kiwi dairy farmers retain their position as the most efficient milk producers in the world. Each year LIC invests around \$NZD18 million into research and development, making the co-operative one of the country's largest private investors in R&D for the primary sector.



Dairy production stable despite climate conditions

Dairy sector production has held strong in the face of difficult climate conditions throughout the 2022/23 season.



The annual New Zealand Dairy Statistics report released at the end of 2023 by DairyNZ and Livestock Improvement Corporation (LIC) shows an innovative dairy sector producing well, despite climatic challenges, inflationary pressures, and global supply chain issues.

In the 2022/23 season, milk production remained relatively stable with 20.7 billion litres of milk containing 1.87 billion litres of milksolids processed by dairy companies. This represented a 0.4% decrease in litres produced, but a 0.3% increase in kilograms of milksolids.

While milk production per cow increased, the trend of declining cow numbers continued with a 3.46% decrease to 4.67 million cows.

DairyNZ chief executive Campbell Parker emphasises the good work farmers have done to manage conditions, including Cyclone Gabrielle and high on-farm costs, and the varying impacts these had on farm operations.

"New Zealand dairy farmers continue to focus on using technology information to milk efficiently, while managing their individual farm conditions," says Mr Parker.

"These insights are driving better decisions, while a range of tools help improve herd sustainability and productivity."

The season saw an increase in the percentage of cows herd tested, at 81.1% of total cows tested (3.79 million cows, the highest percentage on record) while artificial breeding remained relatively stable at 3.81 million cows (82% of cows).

LIC chief executive David Chin says the increase in individual cow milk production and uptake of herd improvement services

demonstrates farmers' sharpened focus on cow efficiency.

"Our sector is producing more milksolids from a smaller cow population, and this is testament to the great work of Kiwi dairy farmers.

"Despite a challenging season, farmers have continued to invest in solutions that support them to produce the most sustainable and efficient animals for their herd. The use of high genetic merit sires and record number of cows being herd tested is enabling farmers to breed highly efficient cows that produce more and have a lower emissions intensity profile."

The average dairy co-operative payout (including dividends) from Fonterra and Tatua was \$9.26 for the 2022/23 season, which is the second highest inflation adjusted payout for farmers on record.

New Zealand dairy farmers are resilient and accustomed to managing volatility, with the sector experiencing a drop in expected milk price for the 2023/24 season.

The current Fonterra midpoint forecast sits at \$7.80 per kg of milksolid.

Mr Parker says that dairy plays a large role in contributing to GDP and supporting the prosperity of local communities, as well as providing around 55,000 jobs nationwide.

"While managing climatic conditions, dairy export revenue is expected to increase to \$25.1 billion in for the 2022/23 season.

"We should all be proud of the dedication of the dairy sector and what is achieved even in difficult seasons as we continue to deliver economic growth for New Zealand."



Key statistics from the New Zealand Dairy Statistics 2022/23 report

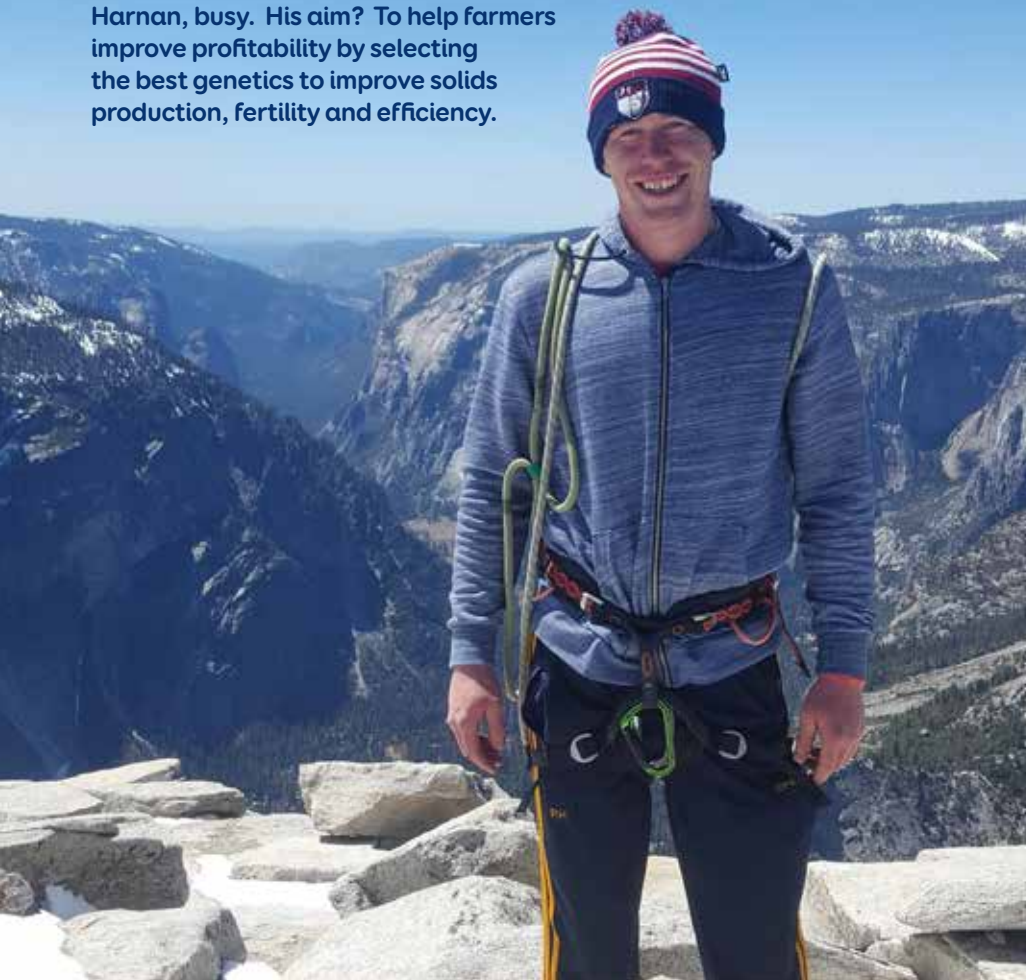
- The dairy sector produced 20.7 billion litres of milk, containing 1.87 billion kilograms of milksolids – a 0.4% decrease in litres and a 0.3% increase in milksolids processed compared with the previous season.
- Average milk production per cow was 393 kg of milksolids (made up of 221 kg milkfat and 173 kg protein), a 1.8% increase from 386 kg last season.
- Cow numbers declined, down to 4.67 million, a decrease of 3.5% from the previous season.
- A total of 3.79 million cows were herd tested (81.1% of cows).
- 3.81 million cows were mated to artificial breeding, which is 82.0% of total cows mated to AB.
- The trend of increasing breeding worth and production worth continued across all breeds.
- The average dairy co-operative payout of \$9.26 per kg milksolids was the second highest payout on record, decreasing from \$9.52 in the previous season.

Download the New Zealand Dairy Statistics 2022/23 report here:
https://connect.dairynz.co.nz/2022-23_Dairy_Statistics



A Day in the Life of ... Padraic Harnan

Looking after the counties of Louth, Meath, Cavan and Monaghan is keeping LIC's newest breeding advisor, Padraic Harnan, busy. His aim? To help farmers improve profitability by selecting the best genetics to improve solids production, fertility and efficiency.



“But it's not just about the breeding of the cows,” he says. “It's also about using the best grass species from improved science, making sure growth is maximised to provide the cheapest food source needed to sustain the cow,” he says.

Padraic joined the team in October 2023 and the job combines the three passions in his life - dairy cows, breeding and grassland management.

His farming interests started when he was just 7 years old, when he used to spend his early mornings before school helping his uncle on the farm next to his parents' home. In the early days, his job was to feed the calves. Then, as the years came and went, he helped out with

the milking, started selecting the right bulls for the crossbred cows that were introduced in 2014, and looked at how best to manage the 200 acres that made up the half owned, half rented farm.

When he left school at 18, he went to UCD, gaining a degree in breeding and grassland management. “Right from an early age I loved farming and cows, and I could see the New Zealand cow was perfect for the Irish farmer. It suits the type of farming and payment system here.”

He studied at UCT for four years, leaving in 2016 when he flew out to New Zealand to work as a farm assistant on a company farm in the South Island. With a large herd of cows, his role was to concentrate on managing calving and

breeding. Padraic says, “I was doing a bit of everything and tried to learn all I could.”

One of the key things he learned was how to manage the lifestyle and work balance, so that workers were not expected to be on the farm for 14 hours every day. “They try to stick to a normal working week for their staff, getting the rostering right is very important there.”

A year later he took a gap year and travelled across Canada and the US before a brief return to New Zealand for a Positive Farmers conference and three weeks of travelling.

On his return to Ireland he started working on a dairy conversion unit in Co. Kildare where he enjoyed picking the stock that was going to form the milking

herd. He was offered the manager's job but turned it down to return to his home town of Moynalvey, Co. Meath, where he worked part time in a veterinary business as an assistant doing jobs such as; body condition scoring, weighing calves and running some milk powder trials.

"At the same time I started my own breeding advice service," he explains. "I dealt with about 10 farmers producing individual breed plans." Early in 2023 he was back helping his uncle with his 144-head herd of crossbred milkers, continuing to work with his 10 farmers.

He and his uncle had plans to expand the farm, growing it so that there was enough profit to support two families, but politics conspired against them, with it proving impossible to purchase additional land.

So when the opportunity with LIC arose, Padraic saw a chance to combine all his passions in one role.

"It was the right job at the right time," he says. "It is very challenging, as with some producers it means they have got to rethink decisions they have made for many years. But once you've walked out to see the cows, talked about the breeding, got them to look at the value of solids production over simply producing as many litres as you can, they start to show interest.

"At the moment all the LIC bull teams are really strong.

"There's a lot of interest in sexed semen, I would say 90 to 95% of my sales are of sexed. Although the breeding season starts in April/early May some bulls have already run out. There's more emphasis

on quality beef semen than there has been in the past, with more sexed used to help with the bull calf issue."

So, what does Padraic do with his spare time? He laughs, and says he has no spare time! He has a partner Niamh and a little girl Ailvhe born in September 2023. He says his daughter brings a smile to his face every day, even when she's grumpy!

Throughout his life he's been a very keen Gaelic footballer, playing centre back at County level. "My father got me on the pitch when I was just 5 years old, so I'll certainly be getting Ailvhe out there and will enjoy watching her play," he says.

Other than that, he enjoys socialising with his former teammates in the local hostelry, and still enjoys travelling when he gets the chance.

"I don't really have time for anything else," he says. "I'm always asking questions and trying to learn more, looking at what bulls can improve milksolids, udders and fertility, and trying to make the herds more 'even'. The ideal will be to have cows that produce 500 kg of milksolids from grass in Ireland.

"Often I will find herds with extremes, either high litres and low solids, or high solids and low litres. I enjoy matching the right bulls to these cows to gain uniformity and improve both profitability and efficiency."



A change in milking regime makes life so much easier

Introducing a 10:7 milking regime each summer has allowed Co. Waterford dairy farmer, Aidan Ahearne, to reclaim 64 milkings, saving him 128 hours of work in the parlour. This change not only gives him more time with his family but also improves his overall lifestyle. Remarkably, these adjustments have not affected the solids production or income from his herd.

“Farming at Scart Dairy Farm near Dungarvan in partnership with his father Thomas and wife Lisa, Aidan had been contemplating a switch to the 10:7 milking schedule as far back as 2018, during Ireland’s drought. He had observed its effectiveness during a similar situation in New Zealand.

At the time the system included 16-hour breaks between milkings, resulting in late evening milkings, often around 6pm. However, subsequent research has emphasized the importance of milking at consistent times each day, making the process much more manageable for labour. The revised approach has been a welcome change, as he didn’t enjoy milking late at night.

Aidan first introduced 10:7 from the beginning of October to drying off in 2022, then again from July 15 to drying off in 2023. So, from early July, about three months into each cows’ lactation, he milks every Monday, Wednesday and Friday twice a day. These milkings are at 0630 and 1530. On Tuesday, Thursday, Saturday and Sunday, he milks once a day, usually around 0930 and sometimes a little earlier on a Sunday.

“That gives us almost a 24-hour break between Sunday and Monday, which provides more time to spend with family or to leave the farm, and also enjoy our hobbies,” he says.

“I’m very lucky as I have a full-time herdsman, but if I was in the situation where I was working on my own and finding it hard to get labour, which is currently happening on a lot of farms in Ireland, I would say it’s a complete no brainer to make the switch to 10:7.”

Aidan farms a total of 93 hectares,

including 4.2 hectares in an out block. Of the total area, 16 hectares are leased. The farm consists entirely of grassland.

They currently milk 216 crossbred cows, primarily 50% Jersey and 50% Friesian. Each cow weighs approximately 500 kg. The goal is to achieve a yield of 500 kg milksolids per cow, aiming to match bodyweight with yield.

“In 2023, we produced 479 kg of milksolids, compared to 485 kg in 2022 and 484 kg in 2021. I believe the slight decrease this past year was mainly due to the exceptionally poor weather we experienced from September to November. I don’t think it had anything to do with the change in milking pattern.”

While research indicates that a 10:7 milking schedule can be maintained throughout the lactation, Aidan prioritises using sexed semen extensively on his herd. This approach allows him to produce 40 heifers or so, that he aims for as replacements each year and understands how important mating time is to get cows in-calf to first service.

“Perhaps I’m not quite brave enough to go

all the way,” he says. “What I am doing now works well, and as we are, in the longer term, looking more closely at producing the right beef animals for the future, I need to be careful about making massive changes. It’s handy at the start to be doing two milkings a day as we can keep a close eye on when cows are ready for service.

“For us it’s a lifestyle thing. My herdsman Steven gets paid the same wage by going 10:7. He’s working less hours, but he’s getting paid the same. His contentment is important and so is mine. The weather was so bad last autumn but we didn’t get that milking fatigue you can get at the end of the year. We weren’t in there twice a day, every day, milking.

“I’d say the couple of kilos dropped in milksolids is made-up for in reduced electricity, less chemical use, and stuff like that. In addition, the cows put on a bit more body condition and we had less lameness. At worst I’d say the switch was cost neutral.”

In New Zealand the dairy herd sizes are far bigger, so the number of cows per man is higher. Aidan says that, as herd sizes increase in Ireland, each person is having to manage more animals, and this, in turn,



puts more emphasis on the need for a more manageable lifestyle.

"This is going to drive efficiencies, with farmers looking at ways to reduce labour and make units more sustainable. We also need to be sustainable for ourselves, ensuring that we don't get burnt out."

Aidan has been developing his herd of crossbred cows for many years now and says the best thing he would say about them is that they make an average farmer a good farmer because they're so easy to work with.

He uses LIC semen almost exclusively, and is currently using Priests Solaris (PSQ), Okura Integrity (OKT), Arrieta Nomad (APY), Priests Sierra (ZSP), Howses Springfield (FR6790), Glen Koru Epic (JE4509) and Werders Premonition (JEX143).

"Their temperament is good. They're robust, and don't get sick easily and you can manage them more easily. Put them out in the field in foul weather and they just go and put their heads down and graze. I find they're an easy cow to look after, they're fertile and have good feet."

The farm's calving start date target is the 1st of February, with the aim of getting 90% calved in the first six weeks. "We haven't achieved that yet, but we're close," he says. "Two years ago, we were at 88%, last year at 86%, so we're close or thereabouts."

"We give the first calvers at least a 12-week dry period, drying them off in November. The rest of the cows get at least eight weeks dry. Last year we had the herd dry by 16th December, so we're dry for Christmas and most of January."

"Once the cows have calved, weather permitting, we get them straight out to grass, day and night. They get fed around 3kg of meal and we'll keep them on maybe 3 to 4kg up until April and then, as the grass growth increases, we cut that down. The target is to feed maybe 700 kg of meal."

The goal for silage is to provide 1.2 tonnes of dry matter per cow. This involves cutting 45% of the farm for the first round and 30% for the second. Aidan also utilises red clover in the out block sward, cutting it three to four times to produce large round bales of high-quality silage for buffer feeding. This silage is typically fed in the autumn as needed.

Reflecting on his decision to switch to a 10:7 milking schedule in 2018, Aidan is steadfast in his belief that it was a wise move. He asserts that the new milking pattern has significantly eased his workload without any negative impact on productivity or profitability.

"I would thoroughly recommend it," he affirms. "It has made things much easier here, and I have no regrets at all."



Use LIC's Variable Milking Selection Index to help you move

As LIC breeding advisors, we've seen a very enthusiastic uptake of 10:7 milking by farmers. In the last year or so. This means that in a week, there are three days where the cows are only milked once a day. Or, part of the season is 10:7, where farmers transition over from TAD to 10:7 in early July.

These producers can expect about a 4% decrease in KgMS according to trials conducted at Moorepark. Farmers milking for a full season 10:7 would expect to see a 11% decrease in milksolids, compared with a much higher 20% reduction in milksolids/cow on a OAD system.

Farmers are currently looking to reduce the amount of time they spend in the parlour, bringing a better work life balance to their job. This enables them to extend their careers, and make their farms more attractive places to work.

A full season 10:7 could help save nearly 400 hours of milking per year, or some 180 hours (assuming 3 hours/milking) when making the switch to 10:7 in early July.

LIC has developed the Variable Milking Selection Index (VMSI) to help farmers select bulls to breed cows best suited for variable milking regimes whether a variable milking regime is used exclusively, or strategically, for part of the season.

The index reflects what LIC has learned from farmers who've been using variable milking regimes. It takes traits such as udder support, front teat placement, milking speed and SCC scores into account, placing less emphasis on functional survival as well as fertility as these traits are less of an issue in these herds than in TAD herds.

Any farmers looking to implement a 10:7 milking regime, be it full season or part season, can use the VMSI as a good guide for bull choice and can work with our breeding advisors to help identify cows within the herd that are best suited to variable milking regimes.

Out and about with LIC

We've certainly been busy since our last update with several events and conferences. These are always great opportunities for us to catch up with clients and offer great learning opportunities as well.

First up was the Irish Farmers Journal Dairy Day, which was held at Páirc Uí Chaoimh in Cork. The venue provided an excellent setting for a great day. The discussions were really interesting, featuring diverse topics led by highly knowledgeable speakers. The atmosphere was vibrant, with a sense of excitement around the place.

The National Dairy conference this year was held at the Lyrath Estate Hotel in Kilkenny. It was a heavily attended event with some very powerful messages. During the initial session, David Beca and Joe Patton delivered compelling presentations, effectively emphasizing the significance of pasture in comprising a substantial portion of the cow's diet, thereby serving as a primary determinant of profitability.

Joe touched on the increased level of meal feeding in recent years, highlighting the limited production gains associated with it and the consequent poor financial

returns. The breakout sessions were particularly insightful.

Don Crowley delivered an excellent presentation on milk quality and the management of SCC. Mick Donovan and Pat Moylan provided intriguing insights into the financial risks and rewards of taking on extra land to keep cow numbers up. However, one of the most interesting discussions was led by Martina Gormley, Emer Kennedy and Aidan Ahern, focusing on the concept of milking 10 in 7.

Emer and Martina spoke about Moorepark's research into 10 in 7 for both a full season and part of a season, while Aidan Ahern shared his own experience of using 10 in 7. This topic is very interesting and one we intend to explore in more detail in the future.

In December and January, we hosted several 'Future Solutions' meetings, in conjunction with Teagasc, all around the country. The meetings focused on new environmental regulations regarding banding and derogation, yet the conversations extended beyond these specific topics. It was an open session, allowing farmers to pose any questions they desired.

The farmers engaged in a lively discussion, with good (occasionally challenging) questions being asked of the panel. The interaction was excellent and was exactly what we were looking for. These events aimed to underscore the significance of breeding for efficiency, optimal component percentages and high milksolids. With banding imposing constraints on the volume of litres we supply, the emphasis shifts towards maximising kg of milksolids.

The more things change, the more they stay the same. The key message is to

prioritise breeding for a productive and efficient cow, capable of producing high kilograms of milksolids and percentages, and one that continually gets back in calf each year without much fuss.

The start of the new year is always busy with conferences, and it was very unfortunate that the Positive Farmers and the Grassland Conference clashed this year, because both are excellent conferences that are well worth attending.

During the Positive Farmers conference, Brendan Horan delivered a great talk emphasising the crucial role of stocking rates in achieving both environmental and financial sustainability, and the importance of high amounts of grass in the cow's diet.

Zoe McKay and Michale Wallace showcased the work being done at the UCD Lyons Estate Farm. Despite being a high input system, with each cow receiving 1.5 tonnes of meal they're achieving impressive results both in terms of physical KPIs and finance. They emphasised the additional management required to maintain profitability, noting that while high milk prices yield substantial profits, low milk prices result in less profitability.

There was also a great presentation from Paul Bird from DairyNZ on evaluating opportunities and valuing land dependent on the level of profit that you can achieve while still achieving targeted returns.

A topical session with Dáire Scannlón and Bridge Corkrey shared their journey from farm workers to farm managers, then transitioning to contract milkers before ultimately venturing into milking their own herd of cows on leased land.



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