Working to **secure your future**

Issue 02 2020

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LIC®
LIVESTOCK IMPROVEMENT

Environmental efficiency on dairy farms

Are you concerned about the footprint your dairy cows are leaving on the environment? LIC has been working hard to develop a modelling system that can be used to quantify emissions and excretion, the result is their HoofPrint™ index.

Tony Fransen, environment and welfare manager, explains how it works:

Enteric methane and urinary nitrogen loss from a dairy farm to the environment is inefficient. It can be damaging to water courses, contributes to greenhouse gas emissions and has a negative impact on the community and consumer perception of agriculture, wherever you farm in the world.

Enteric methane makes up around three-quarters of agricultural greenhouse gas emissions on a pastoral dairy farm. Enteric methane is directly proportional to the amount of feed consumed by the animal. This means to drive efficiency for methane we want to maximise milk production for every kilogram of feed consumed on farm.

Managing nitrogen, particularly in a high quality, high nitrogen pasture diet enjoyed by cattle in Ireland, the UK or in New Zealand for example, has challenges. There are times of the year when the high nitrogen content of pasture means that the cow's nitrogen intake significantly exceeds her physiological demands, and the excess is excreted, primarily through her urine.

Nitrogen cannot be created or destroyed by the cow, whatever she ingests must be either partitioned into productive outputs or excreted. Nitrogen enters the cow through her diet, with a lactating cow on average over a full season partitioning approximately 50% in urine, 20% in milk and 30% in her dung.

Across the year the daily level of nitrogen intake and output will change as pasture protein and cow milk production levels fluctuate. Maintaining the balance between N in and N out is important.

Increasing N use efficiency and reducing urinary nitrogen leaching is a key goal for the dairy sector, and much current research, including Dairy NZ's seven-year Low Nitrogen Livestock programme is looking at ways to help achieve this.

The main focus areas for NZ research are:

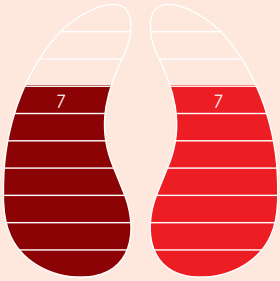
- Dietary changes to balance nitrogen intake
- Breed to partition or distribute nitrogen with lower risk to the environment
- Methods to manage the urine patch after deposition

LIC's new HoofPrint™ index will, for the first time, provide farmers with accurate insights for bulls on the relative lifetime urinary nitrogen and enteric methane efficiency of their progeny. This index will be included in the European bull catalogue for the first time this autumn and is an exciting development.

HoofPrint™

Methane Efficiency

Nitrogen Efficiency



10	Top 2 %
9	Top 7.5 %
8	Top 17.5 %
7	Top 32 %
6	Top 50 %
5	Bottom 50 %
4	Bottom 32 %
3	Bottom 17.5 %
2	Bottom 7.5 %
1	Bottom 2 %

Using genetic information and recognised agricultural greenhouse gas emissions modelling methodology, LIC can assess and rank bulls for the expected environmental impact of their progeny in this index. This will, alongside LIC's leading genetic options and management tools, help farmers to reduce their environmental impact per kg of milk solids while maintaining productivity.

It's a 10-point rating system based on the modelled lifetime production relative to lifetime emissions and excretion generated. This system models the predicted lifetime environmental footprint for all AE enrolled AI dairy bulls born since 1 January 2009. In 2020 this represents 4415 bulls.

Working across all dairy breeds, it gives accurate insights to help farmers breed cows with a lighter environmental footprint, and to produce less methane and nitrogen per kg milk solids.

Six individual breeding values are used to calculate the expected levels of production, growth, calving events, and the removal of each animal. These are liveweight, milk volume, milkfat, protein, fertility and total longevity.

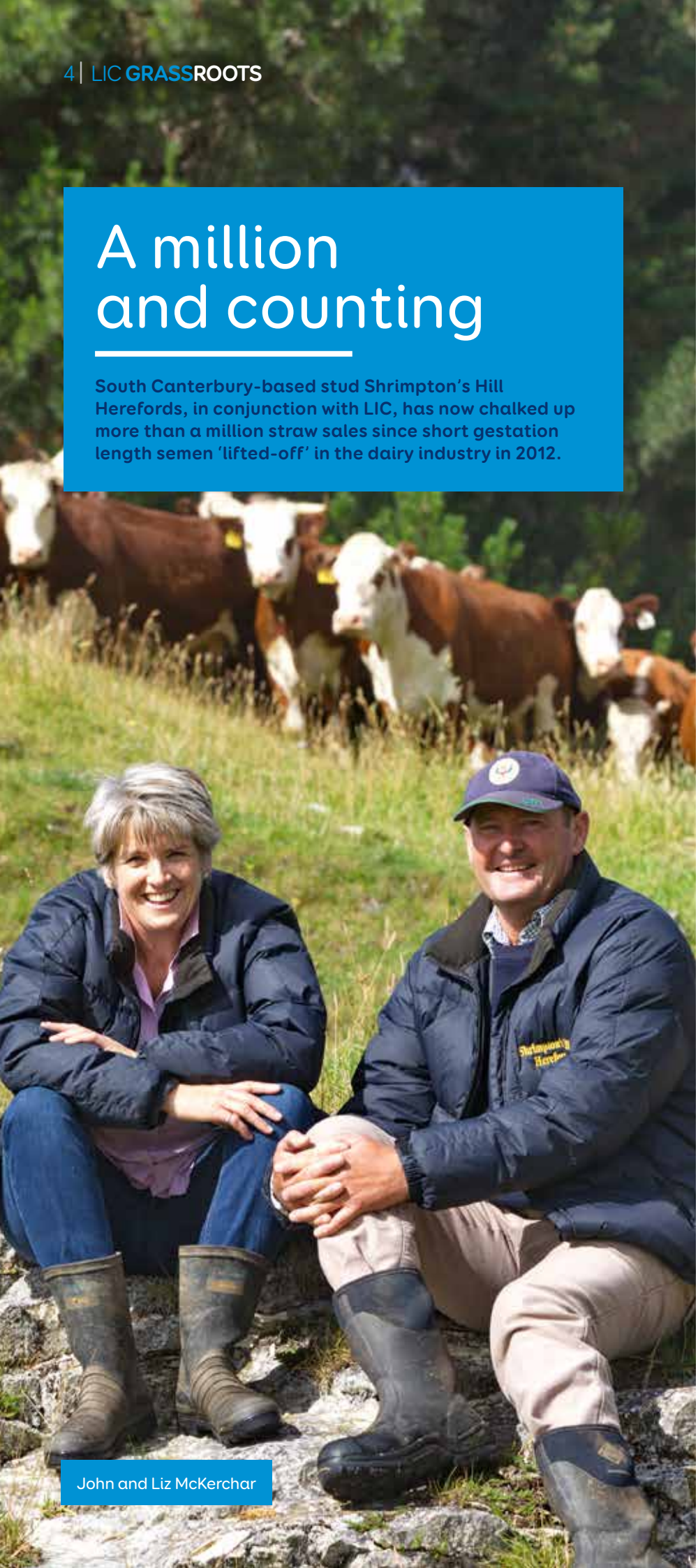
Higher genetic merit animals, on average, perform better when ranked under the HoofPrint™ index and the modelling has been based on the 'Methodology for calculation of New Zealand's agricultural greenhouse gas emissions' developed by NZ scientists in line with the Kyoto protocol requirements.

The ranking system is from 10 to 1 with 10 being the highest ranking (lowest environmental impact per kg product) and 1 being the lowest (highest environmental impact per kg product). And to ensure only the very best bulls are able to achieve a 10 point ranking, only 2% of all bulls in this elite reference population can be awarded a 10 point rating at any one time.

And it's worth pointing out that increases in BW correlate with lower methane and urinary nitrogen output per kg of milk solids produced. Genetic gain has already delivered significant environmental efficiency benefits to the sector. For example, every NZ$10BW increase gives 1.7g less urinary N/KgMS and 2.0g less methane/KgMS. Over 30 years of LIC Premier Sires has given 13% reduction in methane/KgMS and 16% reduction in urinary N/KgMS."

A million and counting

South Canterbury-based stud Shrimpton's Hill Herefords, in conjunction with LIC, has now chalked up more than a million straw sales since short gestation length semen 'lifted-off' in the dairy industry in 2012.



John and Liz McKerchar

John and Liz McKerchar are the owners of the beef farm, an impressive operation that is nowadays specifically tailored to service the dairy industry. The couple's decisive entrepreneurial flair has seen them carve-out a classic market niche within the fast-changing dairy industry.

"To top a million straw sales is incredible," John says.

"It's a huge endorsement of our breeding programme to reach such a milestone. It's also a big endorsement of a wonderful breeding partnership we have with LIC – we couldn't have done it without LIC in terms of their market share, market reach, and promotion of the product.

"So we're very grateful to have a contract, and it's a very close relationship that works well both ways."

The stars aligned

Until 2012 Shrimpton's had been ticking away as yet another supplier to what was an established, mature, beef industry.

"But it's true that about 10 years previous to that, in the early 2000s, we could see things were changing," John says.

"We wanted to grow our business, but beef cow numbers across the industry just weren't growing, and yet the dairy cow numbers were.

"When Fonterra was formed, the animal welfare accord suggested that inducing was to be phased out. It was pretty simple for us to say, 'well if you've got a shorter gestation bull you've got a greater opportunity to market it than a longer gestation bull'.

"That gave us the point of difference we were looking for. We sourced the shortest gestation bull we could find on breedplan, in the Hereford world, and started breeding from there.

"To be fair we didn't do that with our whole herd – we just added it as a sideline... and at times there, we nearly gave it away because some years you'd sell little or no semen, and then you'd get a sale to the odd company and that would encourage us to keep going.

"But inducing got forgotten about for a bit, and dairy herds were expanding that fast that everything was being kept, and a lot were being induced."

In 2012 Malcolm Ellis, at the time LIC's bull acquisition manager (nowadays LIC's GM NZ Markets), gave John and Liz McKerchar a call 'out-of-the-blue'.

"We were just ticking away here doing an AI programme, but Malcolm encouraged us to do embryo transplants and scale-up our AI, and we agreed to a contract. With the LIC supply agreement in place it really gave us the confidence to reinvest,

and it was easy for us to commit the whole herd down the SGL path."

John says their operation still sells bulls to the beef industry, and it remains an important aspect of the business: "But we knew back in 2012 there were only 950,000 beef cows in the country and only 300,000 in the South Island.

"Herefords aren't the preferred breed – Angus is, and beef cow numbers were diminishing. We saw the opening with the dairy industry with the white-face calf being so easily identified. We asked ourselves, 'what does the dairy industry really want?'"

It wanted days-in-milk.

With SGL today firmly entrenched in the dairy industry (generally put over lower breeding worth cows and later-calvers in the herd), it's estimated by LIC that more than $4 million in extra production will be collectively added to farmer milk dockets this spring, all courtesy of the shorter gestation lengths of Shimpton's Hill Herefords.

What now?

John concedes that big initial gains in gestation length are getting incrementally thinner and harder to make as time goes on.

"We go to the extremes of the bell curve when we're looking for genetics that will enhance the SGL programme, but we're mindful of a lot of the other traits that we have to keep an eye on – to run our cows on the tussock country we need them to be good-doing cattle, they need survivability, and we like to buy semen out of bulls with high scrotal so they've got good fertility – that's crucial in our environment."

But the real 'Achilles heel' is new bloodlines, John says.

"We're at the outer limits of the SGL in the Hereford world, and we have to accept lower, shorter, gestation lengths to get an outcross – there are a couple of other New Zealand-based studs concentrating on similar programmes to us, but we've basically all got the same genetics."

So Shrimpton's Hill Stud has turned to Australia to solve the threat of inbreeding.

"We've imported semen from quite a few bulls from Australia because their population is simply larger than ours and there's a lot more AI done over there – we can only purchase genetics that have been AI'd.

"So we've found a stud over there where everything is measured – they concentrate on low birth weight, high-growth rate bulls, and there's very good carcass data. Every now and again they pop out an SGL bull so we hook in to that and we're basically getting all those other traits for nothing."

Shrimpton's Hill will take two new sires a year from the Australian stud for the next five years, John says.

Other developments

Calving ease is always a factor, John says, "because it's the first thing that will wreck our product." But with a sire proving programme now in place at LIC, safeguards have just gone up another level.

"Going forward, 1000 straws from each of up to 10 bulls will be taken and evaluated throughout New Zealand, and the best of those bulls will be picked to replace the bulls at Newstead (LIC's bull farm).

Use of these young bulls early on will give farmers greater confidence in the gestation length and calving ease of these bulls as they graduate into 'proven' Herefords.

"That will help us immensely," John says, because it'll help the McKerchar's own on-farm breeding programme by identifying elite bulls for use in AI and embryo transfer - this should ensure the incremental gains keep progressing.

John says another factor was that when Herefords went over dairy cows, their rankings underwent change: "For example bulls that are only moderate for gestation length (breeding values) in the Hereford world might actually really deliver beyond expectations on the dairy scale for gestation length.

"Being able to know which bulls of these young bulls are punching at or above their weight with how they convert to days on the dairy scale will really empower breeding decisions going forward – that's when you say, 'wow, we're on to something here'."

No argument there. It's clearly evident farmers are also on to something when they pick Shrimpton's Hill Herefords as part of their mating strategy.

Go to **www.licnz.com/sire_catalogueuk.cfm** to look at the SGL collection on offer from LIC and talk to your FSM to place your order.

Dairy farmers get access to new bloodlines

LIC in Europe continues to work closely with LIC New Zealand and its bull breeding/sire proving scheme to offer British and Irish dairy farmers a full range of up-and-coming future stars. The UK offering this autumn, just announced with the launch of a new catalogue, is no different. Ireland's new catalogue is due out later this year.

One of the starting points is to check each bull's family to make sure new and fresh breeding lines are chosen, and to ensure production figures and types/traits plus health status meet international export requirements.

This year there are some great new bloodlines on offer... take a look at a small selection on these pages then go to **www.licnz.com/sire_catalogueuk.cfm** to view all the bulls.

Contact **spocock@liceurope.com** (UK) or **jtobin@liceurope.com** (Ireland) for more information.


Lancelot 2yr


Overtime 2yr


Backdrop 4yr


Malbec 4yr

Holstein Friesian

A revamp of the HF team this year with a great offering of top bulls from new bloodlines. Lancelot, son of Maelstrom, excellent capacity and udder traits. Overtime, at +74kgs for solids, his daughters are slightly smaller sized so he ticks all the boxes for farmers looking to reduce size but increase solids. Backdrop, from a top cow family, a bull who will improve any herd with a massive fertility of 3.9. Bass, one for those looking to increase volume and solids through grass intake.


Explicit 4yr


Snapper 2yr


Gameplan 4yr


Critical 2yr

KiwiCross®

Again a top line-up of bulls with Explicit who combines a massive +82kg solids with excellent capacity. He will appeal to grass-based and higher-performing herds. Critical is another outcross option from Kraakmans Jaydie out of an excellent dam averaging 575kgs solids. Excellent fertility of +3.1 and his daughters are performing well on the ground. Gameplan has a BW of 297, and his daughters are some of the most efficient in NZ. He should feature in every crossbred herd's pot. Finally Snapper, a great choice when you're looking for resilient, hardy cows that produce milk from grass.


Gallivant 4yr


Dexter 4yr


Hoss 4yr


Floyd 4yr

Jersey

Gallivant is the new up-and-coming star and is the number one LIC Jersey for fat with a massive +45kg. He ticks all the boxes for production, fertility, size, capacity and udders. Floyd is a son of the famous Okura Integrity and combines positive milk kg with solids and will produce profitable, grass based, efficient cows. Leopard has a lower liveweight and milk kg volume, so is the perfect first cross bull. His daughters are averaging 6.3%fat and 4.5% protein. Then there's Coyote, bred from the extremely capacious sire Goldie. Positive for milk yield and with 49kg of solids, Coyote is a bull who will maintain milk solids in crossbred herds.

An update from our monitor farm

It's now nine months since LIC Pasture to Profit consultant Sean Chubb started working with North Shropshire College Walford Farm as the company's new monitor unit. With the main challenge being to transition an all year-round calving Holstein herd into a grass-based autumn calving herd, there was an interesting time ahead.

On November 5 last year we started to work with Walford and had our first farm visit. Now, as the college gets ready to start calving down the cows that are in the autumn block, it's timely to look back to see how the first season has gone when measured against our targets.

Our first challenge was to start the transition to a block calving system. This started with us looking at the current calving spread. The plan we came up with was to move all the cows and heifers into two blocks, first an autumn block and then whatever wasn't in-calf from there would be mated in the spring to form the second block.

From there the spring block will be rolled around to autumn after calving down in the 2021 season, this would see all cows calving in the autumn block by the autumn of 2022.

	Pre-mating heats	3-week submission rate	Conception rate	6 week in-calf rate
2019/20	93%	94%	55%	64%
Target	85%	90%	60%	78%

The mating in the autumn was a success, with half of the herd - including the heifers - able to get in-calf for this block. The key performance indicators of conception, and 6 week in-calf rate, indicate the success of this mating period. These figures were never going to meet the targets, as the number of eligible cows was increasing all the time throughout the mating period.

The spring mating period is on target to meet block calving standards with an early pregnancy test showing 46% are to calve in the first two weeks. Tom Moore, farm manager, puts the success of the mating periods down to the herd management tag they're using, with the tags enabling him to focus more time on the development of the farm and working with the students while being down one staff member.

A key aspect of making the transition a success was to get the cows out on grass and achieve good residuals. We were constantly told, leading up to turnout, that Holsteins can't graze and that corrective measures would be needed to keep grass quality.

But this hasn't been the case, with the cows happily grazing down to below 1600KgDM on a regular basis. This is lucky, as the farm has grown more grass than we expected. Average growth is currently 5.45T/ha but if the reseed paddocks are taken out then it is closer to 8T/ha with the highest growth being over 10T/ha.

With a litres-based milk contract we wanted to achieve a good level of production, but also to maximise litres from forage to make the production of milk as cheap as possible. The starting point was turning out the low producing cows in January. This saw no real movement in the production, but a good drop in cost of production, with reductions in both housing and feed costs.

The target was to achieve 8500 litres a cow, as the cows would have half of the year under a high input housed system and we expected to be topping up the cows with additional feed to meet their energy requirements.

	2019/20	Target 19/20	Target long term
Milk – litres/cow	8300 litres	8500 litres	7500 - 8000 litres
Milk from forage	3000 litres		6000 litres

The milk production per cow wasn't met due to the decision to move the high producing cows out to grass full-time instead of keeping them housed part-time, but the loss in milk production was made up for by the decrease in costs.

Covid-19 permitting, we're hoping to hold our next monitor farm open day in October. Details are on this page. We'll be looking at the goals for the season ahead, as well as going over the CFP for this financial year, and we'll be keeping up to date with what's going on at Walford with our monthly updates on Facebook.

We'd also like to invite you to tune in to our series of webinars from the farm by going to our YouTube channel: **LIC-UK Livestock Improvement Corporation**

Timetable

Farm walk Start time: 10:30am Finish 2:00pm

10.00am	Please start arriving and move to the welcoming point
10:30am	**Welcome to Walford Farm**
	Introduce the speakers and the format for the day
	Tom gives an overview of the farm and where they have come from
10.45am	**First topic** - review of 19/20 season and target going forward start with highlighting the targets for the season as well as long term targets. Compare the progress against targets and where the farm was prior to the move to grazing (financial, milk production, feed efficiency)
	out the targets going forward for 20/21 season and how we plan to achieve them
	Questions
11.30am - 12.30pm	**Farm walk** - to look at grass and grazing
	Visit the paddocks that have been identified that need work to get them to produce more grass and get them closer to the top producing paddocks.
	Look at the cows and how well they are grazing, what has Tom done to achieve these results
	Questions
12.30 - 1.00 pm	**Lunch**
1.00 - 2.00 pm	**Breeding**
	Cow manager tags - how they are being used, where the value is seen and how does this compare with other farmers
	What should walford and other farmers be looking at to obtain a tight block and retain cows within the block
	Breeding going forward - what bulls are being used and why, mating length,
	Questions

Please keep checking our Facebook page to ensure this day is able to go ahead. If you register your wish to attend by emailing schubb@liceurope.com we will be sure to keep in touch with you should circumstances change.

Enda, Henry and Aidan

Sexed semen is the way ahead in Galway

Sexed semen has given some great conception rates at One Mile Dairy, the farm of Henry, Patricia and Enda Walsh in Galway, with Henry delighted with the success he's seen this year in the cows, and keen to use an even higher number of straws next year.

Running 320 crossbred cows on a milking platform of 80ha, Henry's farm is in Moneymore East, Oranmore, within two miles of the Atlantic Ocean. He owns 48ha but leases an additional 132ha, some of which is added to the milking platform, with the rest used as support blocks for youngstock and providing winter silage for the dry cows.

He started to move his Holsteins towards an F10 J6 some years back, mainly to improve fertility and develop a cow that would graze grass efficiently. The aim now is for a F12 J4. "We're trying to push a little more on the Friesian as fertility has improved massively but we can't afford to have an issue with the male calf. Every calf born has to have a value," he says.

All cows and heifers were served with dairy semen for the first three weeks, then aiming for between 80 to 100 heifer replacements from his herd to be comfortable. Then he moved across to using AI beef bulls - Aberdeen Angus, Hereford and Wagyu, mostly supplied by LIC. Any cow with an EBI below 120 was bred to beef, and he says about 75% of his herd went to dairy bulls.

This was his first 'big' year with sexed semen, he did take part in a heifer trial five years ago, but says it wasn't too successful. All were scanned in August and the conception rate with the heifers was a bit disappointing at 50% for first insemination. However, the sexed semen used on the cows was very successful with a 68% conception rate when compared to an also excellent result of 73% for conventional AI on the cows.

He says a good 6WICR allowed the cows to have two full heats before serving. "We use heat detection collars which allow us to time our AI better as we practice DIY AI at every milking. We were also selective on the cows we picked and employed good management throughout."

Henry has travelled to New Zealand twice, and each time been very impressed with what he's seen. "My first trip, in 2009 was so intense and so educational that I came back looking to put into practice a lot of what I had learned."

His second visit was this year, in January, and he describes it as 'slower paced' but says it was even more interesting to see how new systems had developed and farming had moved forward, with more emphasis on technology and lifestyle.

"The weakness in dairy farming has always been the fact that it's difficult to have time off," he says. "In New Zealand they operate in a very positive working environment and have a 'team' ethos with two or three people working on the farm and giving help.

"This has always been important to me. One of my sons, Enda, is now on the farm with me, while his brother Aidan is an engineer but also spends spare time here. It's nice to have company when you're working and have a rota so you can have time off."

Finally Henry talks about the importance of flattening the peak. "The Holsteins that I started with had a high six-week peak and we were always trying to get them in calf during this peak. Fertility is critical and our crossbred cows are still producing 1.6 kg's/MS a day now even though we are over 200 days into the lactation.

"Crossbreds are absolutely the way to go, New Zealand Friesians fit our system well, and with the addition of sexed semen we're able to breed our replacements from our best cows. It's a win-win situation."

Henry admits he's an avid reader, and readily devours anything New Zealand, believing he can always learn. In Henry's opinion this belief in the team ethos has allowed him to increase numbers and stocking rate, as well as days in milk, to improve returns leaving the farm attractive and viable for the next generation.

His 320 milkers are stocked at 4 cows/ha and last year delivered 435kgs/MS at 4.70% fat and 3.80% protein. His total milk solids were 1700kgs/ha. The cows weigh an average of 530kgs and are fed 700kgs purchased feed/cow.

Herd Size	320
Milking Platform	80Ha
Outfarm	100Ha
KgMS/cow	435
Cow Liveweight	530kg
Concentrates per Cow	700kg
Empty rate	9%
6 week calving rate	92%
Calving interval	362 days

Donal O'Loughlin

Donal O'Loughlin was one of LIC's first customers in Ireland... and he's still buying 20 years later, saying how happy he is with the quality and the broad selection that gives him plenty of choice.

He milks 232 cows at Rossmore Farm, Newcastle in Co Tipperary and has a 98ha grazing platform with another 40ha used for silage and youngstock. Now his nephew Michael has joined the farm team as a partner, he realizes he has to expand to generate enough income to cover two salaries.

All his cows as Jersey crossbreds, between 60% and 70% Jersey, the rest Friesian with some Swedish Red. But it's the crossbred that works for him, and with a plan to increase numbers up to 280 next year, breeding heifer replacements was vitally important.

"We decided to use sexed semen on all the maiden heifers in May – all 84 of them. I have to admit to being a bit nervous, but our fears were unfounded. Some 55% were in calf to first service and I'm sure we will use it again next year. We did synchronise everything, and made sure body condition was right."

Next year he plans to use sexed on the cows as well, trying to produce the number of heifer calves he needs to grow the unit.

"We wanted 120 heifer calves and may end up selling a few which will help with cash flow," he said. "We're spring calving and try to keep the cows out as long as possible. Ideally they are only inside from December 1 to 4 February.

"LIC genetics used? This year it was Integrity, Misty, Dexter and Hoss. I really like Integrity and have kept some of his semen back now he is going into retirement so I can use it on some good cows in the future."

Rossmore Dairy is on once-a-day milking which helps with labour and saves the cows a lot of walking. They're milked at 06.30 every morning and have to walk up to 2kms each way to reach some of the fields which are 800ft above sea level under the Knockmealdown Mountains.

"The main trait we seek is efficiency," he says. "We want the same bodyweight in solids. We're aiming to get the cows' weight down to 420 kgs apiece and get a yield of 420 kgs milk solids. At the moment, when we weighed them all in April, they were 455 kgs, and 485 kgs the year before, so we're heading in the right direction."

Donal and his cows

He says with a smaller cow he can have a higher stocking rate, and will be increasing from 2.6 cows/ha to 2.9 and 3 over the next two years.

Fertility is excellent and is one of the traits he looks for, with only 7 of his 232 cows scanning empty this year, and a 6 week calving rate of 92%. Just four of the 85 heifers were empty.

He uses AI across all the herd and replacements, and the cows put to beef bulls have had Belgian Blue or Herefords this year, both supplied by LIC.

"Going to New Zealand in 1996 was a game changer for me," he says. "The Holsteins were struggling here and I had a big decision to make to change the whole system. We can grow 12T/ha grass, which isn't bad on the top of a mountain, and are working steadily towards the sort of cow that will thrive here. Our aim is to get up to 300 cows in five years time, and to get the majority of our milk from grass."

He feeds just 350-400 kgs concentrate, and his average yield is 400 kgs/milk solids. He is investing in a new De Laval herringbone parlour this autumn, and is adding 50 new cubicles in a separate building as well as putting in a new slurry store next summer.

Herd Size	232 (2020)	280 (2021)
Milking Platform	98Ha	
Outfarm	40Ha	
KgMS/cow	420	
Cow Liveweight	480kg (2019)	455Kg (2020)
Concentrates per Cow	350-400kg	
Empty rate	3% cows	4.7% heifers
6 week calving rate	92%	
Calving interval	366 days	

"I'm milking 50 Integrity daughters now, and I really like them. They're doing very well and offer all the traits I'm looking for - solids, fertility and yield. I believe our future here is very bright, and I look forward to growing my herd and producing even more milk from grass."

A day in the life of breeding advisor **Leonard Gavin**

Leonard Gavin loves cows... so much so, that as well as his job as a breeding advisor for LIC, he is investing in his own herd on a leased farm in County Westmeath and starting his day at 6am to get the cows milked before he hits the road.

Surprisingly he doesn't come from a farming background. Both his parents were civil servants, but looking for some extra pocket money he took a farm job in his school holidays from the age of 15 and 'farming just got under my skin'.

He joined LIC a little over two years ago, in September 2018, and describes his role as 'the perfect job'. Prior to this he was a farm manager in County Wicklow, a role he took on after gaining a degree in dairy business from University College Dublin.

His grandfather has a small farm, but that was never his lead into farming.

"I just fell in love with cows and grass, they're the perfect mix, it really was that simple."

He started to follow a columnist in one of the local farming papers and learnt as much as he could immersing himself in the farming community. In 2015 he made the decision to travel to New Zealand as part the UCD degree, and it was there that he really saw the benefits of crossbred cows and noted their ability to deliver a good profit margin from grass.

He worked as an assistant herd manager in a share farming partnership in Fairlie, Canterbury based in the South Island. With 1100 cows on a full New Zealand grazing system, Leonard explains: "When I came back to Ireland six months later I was determined to become a dairy farmer."

He applied for the job with LIC after his spell in Wicklow, and hasn't looked back since, describing every day as full of challenges. "I love the opportunity to go out on farms, have some banter, meet new people and see the difference that our bulls can make. There's nothing as rewarding as seeing recommendations we have made lead to improved results, whether these are higher milk solids, better fertility or more days in milk."

He says there's nothing he doesn't enjoy, and particularly finds the LIC 'team' approach one that encourages development and the exchange of ideas. "Farming can be a very lonely job, made worse with the need to isolate due to Covid-19, so the team approach has been very helpful and has seen a lot of our customers welcome our visits (where possible) and conversations."

On his own, new, leased farm, Leonard is milking 120 cows, all crossbreads, 90 of which are his own, and 30 leased from the farmer who's land he rents. All the crossbred cows are put to a KiwiCross™ bull and all the Friesians go to a Jersey. Youngstock consist of 80 heifers and 39 replacement calves. Aiming to milk 200 cows in 2023.

He always does the morning milking, and tries to do the afternoon one when he can, but has a herdsman to help out. "It isn't easy getting into farming these days, it needs capital. Starting capital was funded by buying youngstock and bringing them through, relief milking and not having to take a salary from the farm has allowed for farm development."

He's on his first farm – usually meeting up to four farmers plus a day – by 10am, aiming to arrive after milking so as to not interfere with the day. He reckons he covers over 40,000 kms a year covering an area about the third the size of Ireland.

Back on his own farm, the milking herd consists of 70 cows and 50 heifers, fed 1T of concentrates/head/year. His aim is for each animal to produce over 500 kgs in milk solids, and at the moment he's getting 4.93% fat and 3.74% protein.

He describes the cows as 'big ladies' with the Friesians at around 580 kgs and the crossbreds at 500 kgs. His aim is to gradually bring the weight down so he can improve stocking rates and increase numbers.

With this being such an unusual year, he hasn't had much time to enjoy his main hobby, GAA, where he gets involved with hurling, something he's done all his life, and football.

He jokingly says his girlfriend Aisling takes up a lot of his time, alongside his dog, Rua, a cross between a Golden Retriever and Irish Setter.

"No two days are the same and I think I'm very lucky to meet, and learn from, so many different people. I just hope we can get back to some kind of normal soon - as much as for the farming community I visit, as for myself."

IS THIS A RECORD?

Take a good look at this very special 2 year-old heifer. She's an F9J7 crossbred by Sierra out of an Integrity dam.

Why is she special?

She has just delivered **1.41 times her weight in milk solids**... a record unless you know any better.

Weighing in at 411 kgs, she produced 581 kgs of milk solids at 5.71% fat and 3.93% protein, giving a total of 6000 kgs sold to the creamery.

She belongs to Joe Kirwan, who farms near the Horse and Jockey in Thurles, Co Tipperary, and he says she's the sort of heifer you wouldn't notice in the field but that she's 'super efficient'.

"If we could breed a herd of these it would be a dream," he says. Currently milking 224 KiwiCross™ cows at a stocking rate of 3.8, he's aiming to get the stocking rate over 4 in the next 12 months, and to keep using proven LIC genetics, rather than high EBI geonomic bulls.

To hear more about his results, including those from his New Zealand Friesian embryos, and his plans for the future tune in to **https://www.podbean.com/eu/pb-ys87v-edbdec** to hear his podcast.

In the first issue of GrassRoots, LIC's UK sales manager Sally Pocock introduced the new LIC Herd Improvement Tool. Here she continues explaining how it can help farmers improve their cows and efficiency, and we talk to a Welsh farmer who has used the tool for the first time this season.

Herd Improvement Tool

Calves you rear

Applying selection processes and developing a mating plan that increases the quality of the calves you rear will ensure your efforts are rewarded with the best possible heifers entering your herd.

Selecting any surplus dairy calves to sell is therefore simplified, as these have already been identified through the herd improvement report based on the production records of the dams. Retain your best and move off the rest.

Strategically mating your bottom ranked cows to beef from day one ensures your non-replacement stock are a profitable product that will not impact on the future milk production of your herd.

When planning to mate your heifers, remember they need to be well grown (60% of mature liveweight) at the start of mating. A good quality heifer will be in your herd for multiple lactations so give her the best start possible.

Bulls you use

With such a wide a variety of semen options available to farmers, measuring the performance of the progeny being produced is even more important. To drive the industry forward (from a genetic point of view) the measurement of your cows once they enter the herd is the true realisation of the breeding decisions you've made.

Your bull selection should always be in-line with your overall herd improvement strategy and remain true to improving your key breeding traits such as fat, protein and fertility, while maintaining the type of animal you want to be milking.

With sexed semen, conventional, beef and short gestation options available it can be difficult to choose a team of bulls that will give you what you are looking for.

Remember you have half the equation in the dam and that LIC is here to help you select the best bulls to support your herd improvement plans.

Where possible avoid inbreeding and watch the calving difficulty of bulls especially when planning your heifer mating.

Cows you cull

Having a strategic herd improvement plan allows focused selection to be applied across your herd.

The ability to identify (well in advance) poorer performing cows, and being able to select and remove these animals should pressure be placed upon the milking herd, will enable you to continuously increase the profitability while selectively removing passengers not earning their keep.

Record and measure the traits of your cows. Informed decision-making is critical to profitability, and the more evidential data you have, the better the decision you make.

Take the time to physically look at your herd. Identify those animals your like and want more of, it's no good breeding replacements that you won't want to work with every day.

Remember breeding is a long-term game.

You already have one half of the equation, the Dam. The selection of the best sires to go to your best dams will enhance all areas of your herd.

Please give the team at LIC a call to discuss how we can assist your herd improvement and ensure your next generation of calves are securing your future profitability in the industry.

Go to **www.licnz.com/contact_us2.cfm** to find your nearest FSM or call the office on 01725 553008.

Feed efficiency is key

Rhys Williams has been working with LIC for the past 16 years, and is always keen to use new technology that will help him get the most out of his dairy cows, spread across five farms in North Wales.

He's the first to admit he gathers a lot of information on his herds, mainly through milk recording regularly and inputting data on Farm Wizard, Rhys feels it's time he started to use this to identify the most efficient cows, and cow families, and breed from the top performing cows moving forward.

His main unit, Trygarn Farm on the Llyn Peninsula runs 300 crossbred cows on a 70ha grazing platform. All are LIC-bred, with a heavy emphasis on the New Zealand Friesian/Jersey.

He recently made the decision to weigh all his cows, finding their average weight was 507kgs, a weight he is happy with and wants to keep moving forwards.

Now his aim is to keep the weights stable and improve efficiency.

"Using the tool has definitely made decision making a lot easier," he says. "You can get very bogged down in cow efficiency when it's actually farm efficiency that matters."

Entering the data into the improvement tool has enabled him to pick out the best feed converters, for example.

He's keen to research cow families and keep records going back several lactations, so he can ensure he keeps the best of the best. "When animals are culled or die this information is often lost with them, so you're never sure what the mother did."

"I have a lot of data but to be honest I haven't really been in a position to use it effectively. This is a very powerful tool, and I'm looking forward to integrating all my data so I can select from the best.

"We use a team of bulls here, and when we can pull out a league table of the cows it will be very easy to do what we have done on one of the other farms already – have a simple list up on the wall in the farm office clearly indicating which cows are going to dairy and which to beef, based on their performance.

"I can already see there are 40 cows that have moved up the league table that we perhaps should have put to a dairy bull. They had been overlooked before."

Rhys admits he's been wanting to get to this 'position' for a long time, but had been scratching his head about how to get there.

"My aim is for each cow to do between 90 and 110% of her liveweight in milk solids each lactation. That means between 475 and 510 kgs milk solids per cow. The aim will be to use the tool to help me put an extra 10-20 kgs milk solids in the tank without spending more money."

Going back to efficiency, Rhys says he has to get the correlation between milk solids/cow and milk solids/ha right, and feels this tool, as well as helping with selection and efficiency, may also allow him to find a route to increase stocking rate and therefore profitability per hectare.

Rhys and his wife Kelly along with his daughter Cadi, the youngest of five children

Sire Proving Scheme

LIC's Sire Proving Scheme is a rigorous, four-year breeding programme that has been producing genetically superior bulls since 1961. Today it is one of the largest of its kind in the world, says John Tobin, Systems Manager Ireland.

Identifying the best of the best

"Our Sire Proving Scheme produces many of New Zealand's best bulls. Graduates from the scheme dominate the Ranking of Active Sires (RAS) list. These bulls also deliver spectacular levels of profitability in herds all over the globe.

We use a combination of ancestry records, DNA testing, and traditional daughter proving to identify the bulls that will add the most genetic value to your herd.

How LIC's Sire Proving Scheme works

Our Sire Proving Scheme is a four-year programme to find the best bulls for our national dairy herds and international markets.

Bulls that graduate from the scheme gain their proofs from the first lactation of their daughters in herds around New Zealand.

Holstein Friesian, Jersey and KiwiCross™ bulls are all included in the breeding programme.

Choosing male calves to join the scheme

LIC works closely with bull breeding farmers to breed bulls from elite cow families. We screen the national herd for other outstanding potential dams, and receive additional offers of bulls bred from the national milking herd of 5 million cows. Each year we identify about 1700 bull calves for screening, and use genomic testing to select about 200 with the most desirable genetic traits. These important traits include:

- fertility
- fat production
- protein production
- udder support.

The 200 genomically selected bull calves join the Sire Proving Scheme and spend the next four years grazing on our bull farms.

Selecting farmers to participate in the scheme

We test the daughters of bulls in the scheme in high-performing herds that are representative of the industry across geographical locations and farm systems. Top New Zealand farmers have the chance to join the scheme each year, which has about 95,000 cows producing 20,000 daughters.

Participating farms must:

- have a stable herd size between 200 - 850 cows
- sign up for four years
- mate 90% of their herd to SPS bulls
- commit to spring block calving
- record any defects
- record daughter trait comments
- present the bull daughters for inspection by independent assessors
- record farmer assessed trait scores

Inseminating cows on participating farms

When the bull calves are 12-months old we collect their semen and inseminate cows in the Sire Proving Scheme herds. After birth, all the daughters are DNA parentage-verified to their sire to ensure information is allocated accurately.

Calving the daughters and measuring their performance

Daughters are mated as yearlings to calve down into herds as two-year olds. Once the daughters have calved and start milking we measure their productivity through regular milk recording.

We collect other information about the daughters during their first lactation, including:

- management and conformation traits
- liveweight and body condition score
- calving difficulty scores for all calvings
- fertility performance measures
- culls and losses

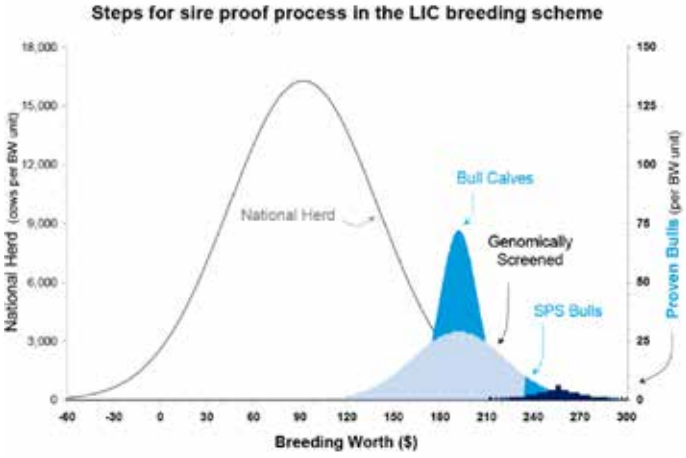
Getting proofs for the bulls

We get proofs for the bulls using information from their daughters' first lactation, comparing daughter performance with their contemporary group in each herd. We use the proofs to identify about 20 top-performing bulls. Their daughters consistently appear at the top end of their group across many herds. These 'graduates' can then join our artificial insemination teams.

But it doesn't stop there, we continue to monitor the bulls' performance after they have graduated from the Sire Proving Scheme to capture more data. This is especially important for slower expressed traits such as fertility and survival, which take longer to get a full daughter proof.

The fertility trait considers the cows ability to repeatedly calve down in the first 6 weeks of calving, and is measured between lactations 1 and 5.

Farmers can have confidence that a LIC daughter-proven bull really is the cream of the crop, with plenty of daughter evidence sitting behind him.



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