

Working to **secure your future**

Issue 06 2021

GRASSROOTS

**Joyce Voogt on
reproductive efficiency**
pages 6-7



**Volume vs Solids
- which way to go**
page 3

**Fertiliser challenges
and how to meet them**
pages 4-5

**The Forwards® moving
your herd forward**
pages 10-11

Variable milking options
pages 14-15

Ways to improve in-calf rate

During the winter, farmers should take time to look at their calving pattern to target cows most at risk of not getting back in-calf next season.

“Jair Mandriaza, LIC senior reproduction solutions advisor, said cows that calve late, within three weeks of the planned start of mating, had about a 40% chance of being empty and being culled by the end of the season.*

“Looking after those cows - in fact any cow that calves within 6 weeks of mating start date - will improve their chances,” Jair said.

On the other hand, data suggested that cows that calved within the first six weeks of calving start date had only about a 15% chance of being empty at the end of mating.

Age also affected not-in-calf rates. Cows nine years or older had a 31% chance of being empty.

“Older cows have done a lot of heavy lifting in their milking and reproductive lives, and at nine years of age their reproductive performance suffers.”

Farmers should consider categorising their empty cows by age, calving pattern, and breeding worth (BW) to find where the weaknesses were, Jair said.

Speaking earlier this year in Southland, New Zealand, Jair said cows in the bottom quartile of BW in that region had a 19% chance of being empty, while those in the top quartile were at 13% (similar to the national picture; 20% and 14% respectively).

Looking at lactation worth (LW) as a proxy for milk production, Fertility Focus Report data busts the myth that higher producing cows are harder to get in-calf: For example, top LW cows across Southland had a 14% chance of being empty, while

bottom LW cows in Southland were at 21%.

Farmers could target difficult to get in-calf cows by considering reduction of their milking interval, and prioritising their feed during winter, with the aim of achieving a correct body condition score (BCS) target pre-calving.

“Making sure they’re at the correct body condition score is the best thing you can do,” Jair said.

Although farmers had been targeting six-week-in-calf rates, national results tended to follow the annual fluctuation of the dairy payout.

“This year, with a better milk price, we expect to see it up again,” Jair said.

Not in-calf rates had been stable during the last few seasons throughout the country. “The main change on this measure (compared to 10 years ago) is that farmers are now mating over fewer weeks, and this has resulted in a mating period that’s now between four and five weeks shorter.”

“Every week you continue mating, whether by AI or by using bulls, decreases the empty rate by one to two percent,” Jair said.

“If you cut your mating from 15 weeks to 11 weeks, which is what is happening on many farms, then expect an empty rate four to eight percent higher than what you’re used to.”

He said looking after young stock well was the best thing farmers could do to improve their in-calf rates.



“Puberty is dictated by liveweight, so if your rising-ones and twos are not hitting their targets then they will be harder to get in-calf, and their productive performance will also be below par.”

Figures showed that while calves usually made the 100kg weaning weight easily, it was an uphill battle after that with some losing weight in their first winter, he said.

“Invest in your young stock, because it’s the biggest age group, in number terms, in your herd.”

Jair likened mating performance on-farm to the America’s Cup yacht racing early this year: “The races were frequently won in the starting box, not out on the race course. It’s the same with your herd. If you don’t win the start with your young stock, you’re unlikely to ever catch up.”

**Data taken from all LIC shareholder herds that produced a Detailed Fertility Focus Report for the 2019/2020 season, which equates to 2.4 million cow records.*

The basis of this article first appeared in the March issue of Dairy Exporter, and is republished with permission of its editor.

Jair adds, cows in the bottom quartile of BW had a 19 percent chance of being empty, while those in the top quartile had a 13% chance of being empty.





Control the controllable

John Tobin looks at how to maximise solids production and what extra revenue you could enjoy

Restrictions are coming into play sooner for some farmers than we originally thought.

More than ever, we must ensure that every cow and every litre must pull its weight.

The difference between the top quartile and bottom quartile of all herd tested cows is a massive 160 kgMS difference in New Zealand, and it is likely a similar story here. In a 100 cow herd, that is the difference of €4,000 revenue. The NZ data was corrected for the age of the cow, her breed, and the location within which she is milked.

Nothing new here, as every herd has good cows and poorer performing cows. What is new for a lot of farmers, is they are now capped on the volume they can produce, however, they are not capped on the milk solids that they can produce. In other words, increased production must come from solids and not litres.

Here are two examples to show what this can mean.

This farm's litre production is 637,800l on a 100 cow farm. Table A shows two cows producing the same solids however the litres are different. On a herd level, this can mean more cows producing more solids and generating €30k more revenue within the 635,000l production limit.

Table A	Litres	Fat %	Pro %	Total MS/cow (kg)	solids from 635,000l	Number of cows required to produce 635,000l
Cow A	6378	4.71	3.95	552	55200	100
Cow B	5610	5.68	4.15	552	62376	113

Table B shows if you want to remain at 100 cows but still want to increase your per cow production, increasing litres may not be an

option, but increasing fat and protein will be. The extra solids would generate €19k more revenue. Both cows are producing similar litres but different solids.

Table B	Litres	Fat %	Pro %	Total MS/cow (kg)	Total MS produced (kg)	Number of cows
Cow C	5600	5.12	3.89	505	50500	100
Cow D	5610	5.68	4.15	552	55200	100

Are farmers willing to sell some stock and replace milky cows with higher solid % cows?

This is not a bad option and results are immediate. So many times, farmers have told me that they wished they had taken this route when they decided to change their breeding strategy. They could have got the results from day 1. This is where having a good discussion group, consultant or mentor comes into play, helping you workshop this decision.

What about the breeding side?

When choosing your semen for the coming year, break the milk sub-index down. See if it is volume or fat and protein driving the sub-index figure. Less volume and higher solids % can be achieved within breed, albeit a lot slower, but it is doable.

A good deal of cow variation exists following the 'growth years', where some cows were retained that arguably shouldn't have been. I can understand retaining them at the time, however this is the time to focus on improving herds and securing our future.

For more information contact John Tobin on 086 410 7786 or your local LIC Breeding Advisor.

Webinar on repro

Tune in to our latest webinar which went live on October 26. Follow this link to watch. <https://youtu.be/8gGYIsXv6Tc>

We discussed how Joe Kirwan tweaked his system to improve his repro and also his culling strategy.

His goals for the coming year were set as:

- fertilizer
- meal
- litres
- solids from grass
- DIM

Joe, who farms with his wife Kathleen in Tipperary, Ireland, is joined by Lucy Coleman, a reproduction solutions advisor for LIC, and Joyce Voogt, LIC's international technical manager. Also



on the panel is David Power, Ireland's senior breeding advisor. LIC has a long tradition of advising its farmers on how to improve their repro performance both in NZ and across the world, and when you look at the figures – an average CI of 370 days and 82% calving rate, you can see why.

Webinar on variable milking regimes

With less than 50% of New Zealand farmers now milking twice a day all year, the term flexible milking regime is a big discussion topic as farmers change their milking frequency throughout the year. Join Brent Boyce, LIC's Farmwise consultant, and Steve Davis, LIC's scientist, to hear the latest thoughts on this topic and what opportunities these could offer UK farmers. This webinar will go live at 8pm on November 17, and you'll have a chance to ask questions of both speakers. Hear how both udder health and milk volumes can change, and what this means in terms of profitability and labour savings. Go to https://us02web.zoom.us/webinar/register/WN_dqpYdSE6TgaCK9WRyKs4Ag to sign up to join us on the night. This is a webinar you won't want to miss.



Fertiliser prices - what can we do?

Pasture to Profit consultant Piers Badnell looks at fertiliser price and availability - and asks what we can do with the current volatility in the market.

“ Unfortunately, I’ve no insight into when fertiliser price or supply will ease, but with gas in short supply and winter coming it’s probably later rather than sooner. In grass-based dairy systems grazing as a percentage of the diet is what drives profit. So, with one of our major tools to drive grass growth limited are we snookered?

Maybe not completely, but we have to evolve as we’ve no control over input prices. But we do have total control over our reaction to them. A quick straw poll round a couple of discussion groups demonstrates that most have enough fertiliser in stock for the first round, some for a second and then it drops off. So, what we can do? The obvious answer is go organic. Maybe for some, but not all. To use more organic principles isn’t going to help everyone’s grass growth next spring, when your herd demand requires growth. One of the obvious solutions is clover utilisation, but unless you have it now in sufficient quantities this means introducing the clover next spring and waiting about a year for it to establish and supply nitrogen of its own. So, what route should we take?

Potentially we have a limited supply of nitrogen, so we should have a look at response rates to nitrogen and how and when do we get the most growth for our spend. Below is a table from DairyNZ Facts and Figures as a guide showing response rates to nitrogen. I say a guide because we should look in a little more detail at the subject as soils and growth potential are very different across the country.



Impact of pasture growth rate on response rates to N fertiliser (N applied at optimal rates)

Pasture growth rate	Pasture growth (Kg/DM/Ha/day)	Response (KG DM/Kg N)	Time for full response (weeks)
Slow	10	5	10-14
Moderate	20-40	10	6-8
Fast Rapid	80	20	3-4

Source: Facts & Figures Booklet, DairyNZ

Something to consider is that soils with low soil nitrogen levels, and low organic matter levels, will get a greater response from nitrogen than soils with higher soil nitrogen and organic matter levels. Further information and detail on recommendations and grass requirements and the potential of reducing nitrogen can be found in RB209 Nutrient Management Guide section 3 grass and forage crops which can be ordered or downloaded from AHDB.

Which of your paddocks are the best performers? These will give you the greatest response to fertiliser input, so maybe apply variable rates depending on paddock potential. Following on from this, why are the poor performers poor and what can you do to increase their performance?

March and April are not the time to pull nitrogen too much, but mid and late season have potential. To read more on this, search online for Chris Duller’s work for Farming Connect at the Mountjoy Demo Farm near Haverfordwest.

In purely grazing terms do you require such a spring flush of over 100 growth? If this is luxurious maybe apply a little less nitrogen here, and use the savings later. Another good internet search

that would be useful is Dr George Fisher’s work on sulphur and phosphorus.

Moving on from response rate, the other side of the calculation is how much is the input and what is the economic return? As an example, I’m using 34.5% Nitram at €500/t which makes 1kg of nitrogen €1.44. My example uses 8c and 10c costs of grazed grass per kg dry matter (I would suggest you work your own figure out to truly understand the implications).

Return on investment for 1 Kg N at differing response rates

Response kgs/ DM/ kg	Grass cost to grow p/ kgs/DM	Value of grass p/ kg/DM from 1kg N
10:1	8	80
10:1	10	100
15:1	8	120
15:1	10	150
20:1	8	160
20:1	10	200

So, at 10: 1 response the kgs of nitrogen costs €1.44 and the grass value grown is €0.80 to €1, does this make good sense?

In this example it’s only above a response rate of 15:1 that it starts stacking up.

But you must feed the cow, and grass percentage of the diet drives profit. So, if we feed less grass, we’d feed more supplements of varying quality with associated extra costs... more on this later.

Urea works best in the cool and wet. With drying soils in warm conditions, you’ll lose nitrogen through volatilisation, so think about what product you have and when to use it.

These calculations are all well and good but to achieve any of this, have we got our timing right? Apply nitrogen too early and this will lead to leaching, too late and we miss the boat. Grass starts growing when the soil temperature at 10cm is 5°C for five days, so this is your starting point. A meat

thermometer from any supermarket does a really good job for very little money.

A big influence on the effectiveness and return on your investment of fertiliser is soil health, be that biologically, chemically or structure, but that can't be fixed today. One thing that can be done is pH, liming can be done anytime but a good time is autumn. The table below shows the efficiency of fertiliser use at varying soil pH levels. Soils are very complex so there is more to it than liming to hit the correct pH and all is good. Some soils buffering capacity mean it is hard or impossible to get to high pH's, so we need to look at the relative efficiencies of soils compared to each other. The point being the better the pH, the higher the efficiency of uptake and the less waste. For further info look on the PDA website Truog at their pH chart.

Effects of pH on fertiliser efficiency

Soil Acidity (pH)	Nitrogen	Phosphorus	Potash	Avg Fertiliser wasted
4.5	30%	23%	33%	71.34%
5	53%	34%	52%	53.67%
5.5	77%	48%	77%	32.69%
6	89%	52%	100%	19.67%
7	100%	100%	100%	0%



Lime is relatively cheap and offers good returns on an investment. For further information, look at the AHDB Nutrient Management Guide (RB209) page 13.

Check for compaction - go and dig some holes this autumn. When you find you have compact areas, do something about it.

One resource that we have that many underutilise is slurry. Standard cattle slurry is 6% dry matter and has 2.6kg N/m³ of which 40% is available to the plant if spread between February and April (phosphate 1.2kg/m³ 50% available, potash 2.5kg/m³, 90% available) - source: AHDB



Slurry injected into grass

Nutrient Management Guide (RB209).

Teagasc recommends early March applications of 28 cubic metres/ha application (2500 gallons/acre) to 30% of paddocks with the lowest covers with the rest having bagged nitrogen. At this application this would mean 29kgs/N applied from slurry. These are using standard figures from RB209, slurry does vary depending on system, for greater accuracy stir your pits well and take samples and get it analysed.

Make yourselves aware of regulations around slurry use, so you don't contravene any of the regulations where you live.

Having looked at the growing side, how does grazing compare in terms of relative to other feeds? The table below is an illustration - I would urge you to calculate your costs and do your own relative cost analysis.

Relative Feed Costs

Feed	p/Kg DM	ME	CP%	p/MJ ME	p/%CP
Grazing	8c	12+	20+	0.67	0.40
Grass silage	12c	11	14	1.09	0.86
Grass silage	12c	11.5	15	1.04	0.08
Concentrate	24c	12.5	18	2.21	1.33

Grazing stacks up and, from David Beca's work, pasture harvest is a key determinant of profit in a grass-based system. Look at David Beca's Profitability of International Pasture Based Dairying - what can the UK learn. Pasture to Profit Insight 2021.

Also take account of the cost of feeding supplements. It's not just the cost of the supplement (€/tonne) but also the cost

of feeding those supplements, so if you feed extra - for example adding 1c/litre to feed costs - this isn't just 1c/litre added to total cost of production, it's more. AHDB Milkbench+ work showed the true cost was 1.3 - 1.6c/litre on total costs, because there are associated costs in feeding the supplement... machinery, labour, fuel etc. Your additional cost may or may not be 1.3-1.6c/litre but there will be extra to be calculated.

Fertiliser costs are going up, but a little bit of context is needed as a snapshot of 2020 financials in the groups I work with indicate average fertiliser cost was 3.2% of total costs, with only a 1-2% swing either side. This is taking a narrow view, however, as inflation is apparent in the overall economy, and this will have implications for all of our businesses.

There are many things we don't have control over, for example the current energy situation, but there are things we can do to increase our resilience to them. My first suggestion is soil pH. Even when you're a little below optimum, there are big returns for getting this right today. Application accuracy - make sure your spreader is accurate and serviced and base timings on soil temperatures, moisture and travelability. Fully utilise slurry and take account of it when planning bagged fertiliser. We then must make sure our utilisation is spot on - which comes back to correct average cover all year, accurate allocation and entry covers to hit residuals optimising the grass plant.

In this article I've concentrated on what you can do today, but further thoughts for the future around better use of clovers and lower bagged nitrogen systems, diverse swards and the use of digestates from AD plants are the next steps.



Sources of information:

AHDB RB209 & Healthy Grassland soils
Phosphate Development Association
MANNER - NPK

Lincoln University Dairy Farm (LUDF) New Zealand - LUDF transitioned from a high inputs of N to a lower N inputs 2015/15 to 2018/19

Thanks to Chris Duller & Elaine Jewkes



Reproductive and Labour Efficiencies round out keys to success

Joyce Voigt, Technical Manager, LIC International talks about reproductive efficiency and the easy-care cow in the second of her two articles for GrassRoots



The quest for greater efficiency is an ongoing focus for many UK farms.

Efficiency affects all aspects of the farm business and contributes to improved profit through reducing farm costs or effort per unit of product sold. An efficient farm produces more from less, gets things done with less energy and effort, and has less wastage.

At a herd and farm level, efficiency has many aspects and can include:

- **Feed efficiency** (e.g. the amount of feed utilised to produce a unit of milk)
- **Reproductive efficiency** (e.g. the success in establishing pregnancies from AI matings)
- **Labour efficiency** (e.g. time taken to run the farm, or cows managed per staff member)
- **Environmental efficiency** (e.g. the environmental impact per unit of milk produced)

In a previous article I discussed efficiency in relation to production and the environment. In this article the focus turns to labour and reproductive efficiency and how animal breeding

can help.

As a genetics company, LIC are helping farmers improve efficiency by breeding bulls whose daughters are fertile and easier to get in calf, easy-care and pleasant to manage, and healthier, requiring less intervention.

Reproductive Efficiency

The benefits of reproductive efficiency are enormous and well worth pursuing. They include a compact calving pattern, more pregnancies and lower final empty rate, fewer inseminations used per pregnancy, more early-born calves and more days in milk in block-calving systems. It increases the ability to drive herd improvement and milk quality, generate more revenue from milk and stock sales, and implement shorter breeding periods.

Reproductive efficiency on-farm depends on both genetic and environmental factors, and gains can be accrued in both areas. Non-genetic factors such as calf rearing and heifer management, body condition score, heat detection efficiency, animal health and AI practices have the greatest

impact. Accounting for more than 90% of the outcome. Between 3-7% can be attributed to genetic fertility.

Despite the low heritability of fertility, significant genetic variation exists in the population, giving the ability to breed for it. That is why fertility is included in balanced indexes like BW, EBI, SCI and ACI.

The fertility of NZ genetics has long been known, and genetic trends have been positive in our NZ cow populations since 2015. It is important to track reproductive performance on farm as well.

Large numbers of high-quality reproduction records in the LIC database allowed us to explore the relationship between fertility BV and phenotypic performance, as measured by the 6 week in-calf rate, in NZ dairy herds for the 2019 season.



By analysing over 2.3 million cow records, we saw that, on average, cows with a higher Fertility BV got in-calf better and earlier than those with a lower Fertility BV.

The relationship was not linear, tapering off at higher BVs. It appears the incremental benefits of increasing cow fertility BV beyond BV 1 or 2 at a herd level are small.

NZ research suggests that low genetic fertility herds and those in poorer farm environments will gain proportionately more from high fertility BV bulls.

Crossbreeding can also deliver a boost to reproductive performance, but it is important to remember that heterosis is not heritable (passed on).

Genetics is important, but beyond that, identifying key non-genetic areas for improvement on individual farms is vital for capturing ongoing gains. To uncover the best opportunity to drive reproductive performance on-farm talk to your LIC Farm Solutions Manager or our Pasture to Profit consultant team. For additional reading see the [AHDB's InCalf Guide](#).

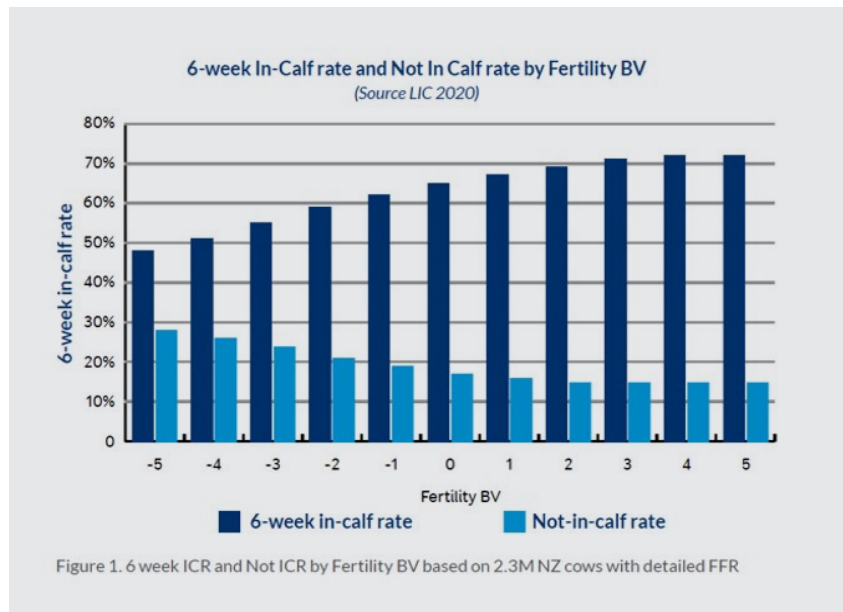
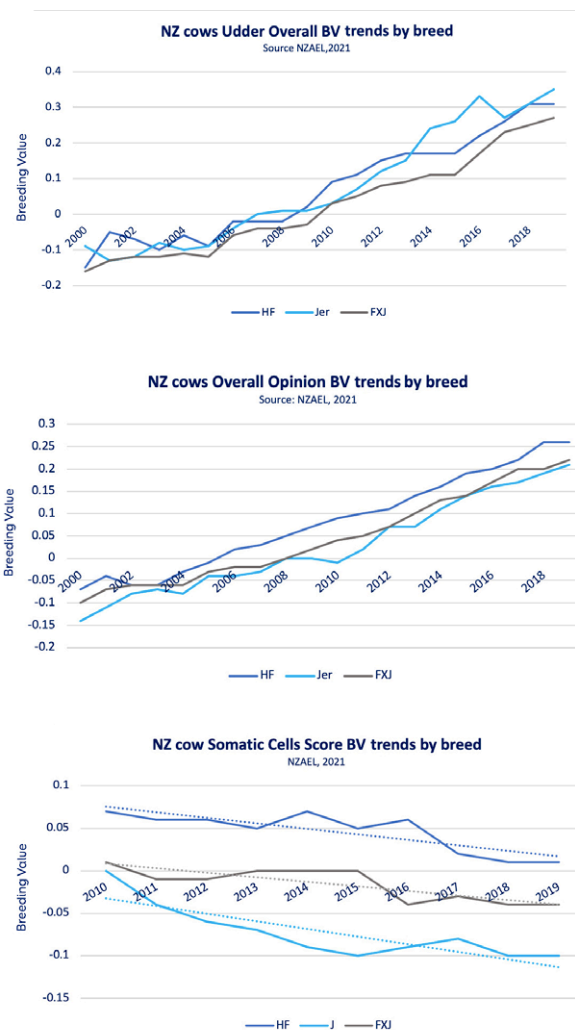


Figure 1. 6 week ICR and Not ICR by Fertility BV based on 2.3M NZ cows with detailed FFR



Labour efficiency and the easy-care cow

Herd sizes are increasing around the world; in the 1990's the average New Zealand herd size was 180 cows, now it is 440 cows. Staffing levels per cow are decreasing as farm size increases, highlighting the need for robust, easy-care, healthy and adaptable cows.

Because of this, LIC puts extra emphasis on management and conformation traits over and above the main production and robustness traits listed in BW.

Milking Speed, Overall Opinion and Calving Difficulty (heifer and cow) are some of the traits assessed in animal evaluation that can help farmers breed more cows that are desirable to manage. These traits are also related to cow survival, which is no coincidence.

Progress is tracked and genetic trends are positive. New phenotypes such as teat length are also being collected as traits of interest are identified by the industry.

Farmers want to enjoy milking their cows, so it's comforting to know that LIC's Sire Proven bulls have all had daughters assessed by NZ farmers for temperament, milking speed, adaptability to

milking and overall opinion.

Calving ease is important for cow, calf and farmer. Parent average and genomic information gives initial calving difficulty breeding values (BVs). In New Zealand, LIC's young dairy bulls are entered into its Sire Proving Scheme. Their calving difficulty BV reliability lifts prior to them being widely used in the national herd, as calving information from their offspring flows in.

Differences between farms demand adaptable cows. Innovative approaches to milking frequency are helping farmers in NZ and abroad find solutions for their own specific challenges, from labour or infrastructure issues to seasonal climatic challenges.

It may come as a surprise that over half of New Zealand farmers no longer follow traditional full season twice-a-day milking models of farming, so their cows need to be adaptable across a wide range of farm systems. To find out more about these flexible milking regimes and the cows that are best suited to them, talk to a Pasture to Profit consultant and your FSM.

Efficiency has many aspects. Whether the focus is production, environment, reproduction or management, breeding for efficiency can help you achieve your goal.





Sylvia Powell is both inspirational and productive

Sylvia Powell is an inspiring individual. Growing up on a dairy farm with three brothers, she was told there was no room for her to farm, and she had to leave to find another route into agriculture. So, starting with a purchased farm of 40ha in 2001, she and her husband John gradually built-up farm size - by buying more land and renting - at the same time increasing cow numbers from 40 to the 260 crossbred cows they milk today.

It's been a tough road, working her way up the farming ladder for the past 20 years, and believing in her commitment to milk Jersey cross cows on a simple grass-based system at a time when producers all around her were going for high yielding Holsteins fed high levels of concentrates.

"My neighbours were scathing about my decision making, and to be fair, at the start, I was also thinking of going the pure Friesian way. But I knew we had to run a system that would make the farm profitable and allow us to grow, so a simple grass-based system, almost unheard of at the time, was the route we took."

Both had spent time in New Zealand, John in 1993-94 and Sylvia from 1998-99, and worked on large dairy units seeing the value and returns gained from managing crossbred easy-care cows.

In 2003 they managed to secure a 20,000 gallon quota from their buyer, Lakeland Dairies, and away they went. Their first goal was to milk 100 cows by 2006, and by 2012 they had 150 cows going through the parlour. Growth continued, with more land leased and some purchased, and stocking rates increasing as the herd built up to the 260 managed today.

The couple farm at Boherbay Farm, Birr, Co.Offaly and rear all calves from the milking herd. They aim to rear 100 dairy replacements, selling as many as they can and keeping just the ones they need for replacements. Of the remaining 150, some are put to LIC's Shrimpton Hill Herefords, some kept as bull beef and some as steers, with Angus or Belgian Blues used as the terminal sire.

"Every animal born here has a value," she says. "We're grateful for everyone

we have, and it wouldn't sit well with us to give them away, as some farmers do. It's a matter of developing the right systems to rear them in the best and most economic way to ensure we get value."

The couple run a compact calving system with calves on the ground between early February and mid April. They start out in a purpose built shed, and are fed whole milk, kept in groups of 10. By the end of March they start going out to grass and move into groups of 40, still fed milk from two 50 teat circular feeders moved out to the pasture on the back of a quad bike. As they get stronger they move into groups of 80 and come back inside around October time, depending on the weather.

They go back out in the second spring, usually from February, and start being sold from mid-summer onwards. Latest prices show a return of €2/kg for the





beef heifers and beef stores, €1.50 to €1.60 for the Jersey-cross. “The calves are a by-product of our dairy industry and, if the housewife is buying mince, for example, does the breed of animal it comes from really matter?”

Sylvia puts her enthusiasm and commitment to farming down to the Farm Apprenticeship Scheme she undertook for three years - it was also while on this scheme that she met her husband! It put her on three different farms over the three year course and in the second year she met the farmer, also called John Powell, who she says became her mentor and inspiration.

“He was what was called a ‘master farmer’ at the time and had such a can-do attitude, and such a passion for farming that rubbed off on me. Sadly, he died in a car accident three years ago, but he was behind my trip to New Zealand and just took everything in his stride. At one point one of his cows had fallen in the river and she had to go to the knacker’s yard. Back came a message that she had BSE. For all of us, and his wife, who was in tears, this was nearly the end of the world. But he came into dinner, hadn’t heard the news and found us all sad. We told him what had happened, he put down his knife and said: ‘We’ll just have to get on with it.’ He lost all his 600 animals a couple of months later, took it in his stride and started again.”

In this job you have to have resilience, and that’s something she has in bucket loads. “Last year we got a virus in the calves and lost 13 in a week. This job is a constant challenge, and you have to be able to get over everything that goes wrong and move on. You have to battle on, and recognise it isn’t the end of the world.”

Looking ahead one of the issues facing the couple is the difficulty in getting or keeping staff. The Farm Apprenticeship Scheme was replaced several years ago with the Professional Farm Management course, now run at Moorepark, and this year has only attracted around 13 applicants. “When I did the FAS there would be over 100 in the first year, this would reduce to 80 in the second and around 60 would qualify. I think these

reduced numbers are an indication of the times, there’s a general reluctance to go to college rather than university, and the youth are no longer interested in jobs in agriculture.”

With a stocking rate of 4.1 cows/ha, it’s vital the Powell’s look after their grass well, and make good quality silage to make the most of the herd’s ability to milk from forage.

“We get a silage yield of around 12 tonnes/acre and aim to cut 170 acres as first cut and 100 acres as second. We’ve a wide range of soils, from dry to peaty. To protect the grazing, we zero graze the cows in spring and sometimes in the autumn, reducing demand, avoiding poaching and extending the grazing at both shoulders of the year.”

Sylvia does most of the AI herself, and they’ve used LIC semen throughout. Empty rates are 8% with just 800kg concentrates fed and yields averaging 485kgs/cow from an average weight of 500kgs/head.

“We’ve invested in buildings and we need to move more towards using sexed semen,” she adds. “We’re not planning to add more cows - our stocking rate is already very high - but we would be interested in taking on another farm or more land. Our future is here, and we’re totally committed to driving ourselves forward and making this work.”

Somewhere along the road the couple managed to have three sons, now 15, 12 and 9 and Sylvia is adamant she

wouldn’t have got this far without her husband. The farm is his pride and passion and she says they have always worked well as a team.

“The passion drives us both,” she says. “We love being able to stand back and look at the progress we’ve made and admire how far we’ve come. The progress we can see we’ve made drives us forward to our next challenge and next development.”



You’re left with the distinct impression that Sylvia should be seen as an inspiration to many aspiring farmers. She’s the living proof that if you believe in something enough, and you’re prepared to put your back into your job, you can make it work. She’s come through adversity and is now really enjoying a business she clearly loves.

2020 Stats	
Herd size	260
Milking Platform (ha)	69
Outfarm (ha)	129
KgMS/cow	485
Fat/Protein %	4.85/3.72
Cow Liveweight	500
Concentrates per Cow	800
Mating length	12 weeks
Empty rate	8%
6 week calving rate	85%



The Forwards[®] sire team: Going from strength-to-strength

We're now in the fourth year of the Irish Bull Breeding (IBB) program and have been working with farmers all over Ireland to produce the next generation of The Forwards[®] bulls. During this time, we have seen a lot of exceptional cows doing in excess of 600-700kg milk solids from less than 0.5 Tonne of meal. These cows are still calving down in the first 3 weeks giving the holy grail of fertility and milk with no compromise!



Aaron

Name	EBI	Fertility SI	Milk SI	Milk kg	Fat kg/%	Protein kg/%	gBW	Fertility BV	Milk Volume BV (l)
LIC MOOREHILL MAX	279/55	126	100	24	19 / 0.31	11 / 0.17	337/58	4.0	539
LIC BOPURU BRO	279/55	124	116	152	25 / 0.33	13 / 0.14	296/55	3.2	397
LIC CLOHANE CRACKER	271/53	113	102	-168	20 / 0.48	8 / 0.24	264/55	2.5	176
LIC NEXT GEN IMPOSSIBLE	252/53	101	107	-245	20 / 0.54	7 / 0.29	234/55	2.8	-318



Breeding these proven cows with top-ranked proven sires gives the best chance of producing some very good young bulls for selection as sires.

IBB genomic bulls stand out from the others:

- The Forwards are a genomic team sired by top LIC daughter-proven bulls.
- Genomic selection advances in New Zealand allow us to screen the DNA of our Irish bulls against the NZ reference population in a single step model to obtain a unique genomic BW (gBW). This gives us confidence in the bulls we secure for our program.
- gBW assesses fertility differently, using phenotypes that are more relevant in seasonal calving systems, where early-calving cows are highly valued.

Instead of calving interval, the 6-week calving rate (CR42) is currently used and further enhancements to fertility genetic evaluation are coming soon. This is more appropriate because calving interval can potentially penalise the early-calved fertile cow.¹

Stachowicz, Berry, Cromie and others addressed this issue in their 2018 paper 'Changes to the Genetic Evaluation of Fertility in Irish Dairy Cattle', which concluded -

'For seasonal herds, the introduction of calving rate and conception rate traits offers an opportunity to further enhance the fertility evaluation by better extracting information from calving and mating date phenotypes in seasonal calving herds.'

gBW includes NZ genomic information, which increases reliability of later-expressed traits such as fertility and longevity.

- LIC breeding experts examine the candidate bull's pedigree, physical attributes and cow family information to increase the accuracy of delivering genetics to further improve the genetic merit of your herd.

The 2020 intake:

Last year's intake of bulls has been well received by farmers not just in Ireland but also the UK, France and beyond. Farmers are showing confidence in our genomic evaluation and selection process via demand for The Forwards sexed semen product.

In 2022, The Forwards bull team will be available in sexed for the Irish market, including Moorehill Max (F12J4) with 337 gBW and 279 gEBI. Max is sired by the well-known Carsons FM Cairo (FR4507), he is impressive on fertility at 4.0 gBV. His dam's six-year CI average is 371 days.

Our programme manager, John Tobin proudly presents the latest test bulls to join The Forwards team adding,

"This year's new recruits are shaping up nicely with some exciting new bulls coming on-stream. For the first time the 2021 intake will have something for everyone, offering Holstein Friesian, Jersey and KiwiCross® sires to choose from. Again, these bulls are from herds that are doing the business on farms reflective of the typical grass-based, spring calving herds of Ireland and New Zealand.

So, let's take a look at these bulls."

Holstein Friesian:

Martin Kinane's herd outside Tipp town has been the home to the one of the highest EBI herds in Ireland for a long number of years. Martin Kinane has been using LIC genetics for decades, so it is no wonder he has a bull like LIC BOPURU BRO coming through. The prefix for this bull is what The Forwards and Martin's herd are all about. Bopuru is made of Bo (Irish for cow) and Puru (Maori for bull). The dam itself is Martin's favourite cow and he calls her "superb". This cow has achieved 645kgms/yr and 359-day CI over 8 lactations. Bopuru Bro himself sired by Cairo has an €279 gEBI with Milk €116 and Fert €124 and \$296 gBW with a 3.2 Fert BV. Solids are high for the F15 bull. At 540kg liveweight, this bull will fit into any breeding program."



KiwiCross®:

"LIC CLOHANE CRACKER'S dam has been on the radar for the last two years, as she had all the attributes of a bull mother that you would like to see. She is a hardworking cow in a large commercial herd and doing the production with no special treatment. The 536kg liveweight dam is producing 600kgms/lactation on average over the last 6 lactations, while still achieving 364 CI. And now to top it off, this West Cork cow has bred Clohane Cracker. Sired by Riverview and Dexter, Cracker has an €271 gEBI with Milk €102 and Fert €113, and \$264 gBW with 2.5 Fert gBV."

Jersey:

"The NZ Jerseys have been making noise since they arrived in Moorepark in 2018. Nextgen Hillstar Penny is the dam of LIC NEXT GEN IMPOSSIBLE. Penny by name but pounds by production, Penny has produced 505kgms/lactation as a mature 454kg cow while holding onto a 369-day CI. Impossible will increase your solids without increasing litres over the Irish base cow and is ideal for farmers who want more solids but want to supply less litres. Sired by Irish favourite Gallivant."

Just a taste of the bulls coming through our breeding programme and the values that drive our selection process.



For advice on how to use The Forwards® bulls as part of your breeding programme or to order, contact your LIC Ireland breeding advisor.

Fat KG/% BV	Protein KG/% BV	Sire	Breed Split	A2 Status
46/5.1	31/4.0	CARSONS FM CAIRO	F12J4	A2/A2
45/5.3	27/4.0	CARSONS FM CAIRO	F15J1	A1/A2
36/5.3	21/4.1	RIVERVIEW AND DEXTER	J9F7	A2/A2
23/5.6	9/4.3	ULMARRA TT GALLIVANT	J16	A2/A2

1. Stachowicz, K., Jenkins, G.M., Amer, P.R., Berry, D.P., Kelleher, M.M., Kearney, F.F., Evans, R.D., and Cromie, A.R. 2018. Changes to Genetic evaluation of Fertility in Irish Dairy Cattle. Proceedings of the Interbull Meeting in Auckland, New Zealand. February 10-12 2018. Interbull Bulletin 53, 57-62



A day in the life of... Angela Kennedy

It's Angela's voice that many Irish farmers hear when they dial into the LIC and Eurogene Office in Cahir to enquire about semen or place an order. She's proud of the fact that she is now LIC's longest serving team member. Having joined in March 2008, it was brilliant to be part of the new LIC telesales team working alongside Eurogene office staff.

Over the 14 years, she's made lots of friends within the farming community, and although she doesn't come from a farming background, loves talking to her customers and supporting the technical team and breeding advisors in the field.

"Before I came under the LIC/Eurogene wing I was working in our local Mart office in Cahir town, so I was already working with the farming community. When the job came up, I was immediately interested and although I hadn't worked in telesales, I loved the fact I would be talking to, and building relationships with farmers all over Ireland. There are different types of people out there and I learn so much about their situations when I chat to them. During Covid it was great to chat and learn how they are dealing with the practicalities of lockdowns."

Angela's been married to her husband Pat for 36 years and together they've raised three children. The oldest Colm is 35 and a site manager for a construction company, living in Dublin with his partner Eimear. Sheena (33) is a pharmacist also living in Dublin and David (29) works in sports data analysis and lives in Co Clare with his partner Ciara. Just 12 months ago Angela & Pat were thrilled to become grandparents when Sheena and her partner Niall welcomed a baby boy, Liam. She & Pat love when they all come home for



regular visits to Tipperary and Angela especially relishes the visits from little Liam.

Angela was born and reared in Kilcoran, just 5 miles from Cahir, in the countryside. Although she doesn't have farming in her blood, she definitely has the countryside in her blood, and talks enthusiastically about her father who was a gardener at a local hotel. "Growing up I was surrounded by the farming community so that definitely gave me a keen interest in all farming matters and now working for LIC it's great to be part of a team that is working hand in hand with Irish farmers"

Her husband has retired now, was previously a maintenance technician with Medite, a Clonmel based company that makes MDF board. Pat is now delighted to enjoy more gardening and golf.

The couple have lived in the same house for 36 years, when they got married, they bought a site from a local farmer and a contractor built their house. "It's a lovely area, only about two miles from Cahir town, and a lovely place to



rear our children with great neighbours nearby.”

When it comes to talking about hobbies, Angela says her first passion is taking country walks with her friends (and of course a visit to the odd coffee shop!). In our local area there are lots of lovely river and mountain walks, and she often takes her neighbours’ dogs for exercise and company.

Then she’s part of Ballygeary ICA. A few miles from Cahir this ‘club’ welcomes women of all ages and Angela is delighted hers has attracted a lot of new, younger members in their 30’s and 40’s. In other areas of Ireland numbers have been dwindling in ICA Guilds, but thankfully Ballygeary Guild is thriving and they now have a waiting list of women wanting to join.

“Our group does some really interesting things” she explains. “We have monthly meetings and run various classes like Pilates, Reiki, flower arranging and Zumba dance to name but a few. During Covid we even had drama classes on Zoom which involved ICA ladies from over the country taking part and that was really interesting and great fun. Once a year we organise a day trip to someplace interesting which finishes with an evening meal. These days are always fantastic fun.

“I’m really proud to be a part of this group of wonderful women. A lot of our members are from farming families but some, like me, haven’t grown up on a farm and it’s great to meet different people and have many and varied conversations. Meetings can take up a lot of time.”



Turning her thoughts back to her job, Angela says she loves talking on the phone. “I enjoy being support for our Breeding Advisors and following up on calls on their behalf. When the catalogue is released each January, we go through every bull with our senior breeding advisor as new bulls are added every year and I need to be able to explain the traits of each to our farmers.”

She says that March and April are her busiest times, but more farmers are now ordering pre-season to make sure they get straws from the bulls they want before stocks run out, so a lot of business is done in December and January too. “The big thing in 2021 has been the huge increase in interest in sexed semen and we expect this trend to continue to grow in the future “

Angela reckons during the busy season she talks to several hundred farmers a week, making calls to farmers as well as taking their calls when they ring in. Now she has The Forwards® team to

promote as well, she’s enjoying talking about the Irish Bull Breeding Programme and it’s gathering a lot of interest. “We’ll be building on this and will be bringing more bulls in to the programme soon.”

As to the future, she hopes she will continue to grow with the company. “It’s great to be working for a company on the up, and I want to prosper alongside them. Sometimes I get the chance to meet the farmers face-to-face, if they drop into the office or somewhere such as the Ploughing Championships and being able to put a face to the name is always great.”

Asked again about what she enjoys the most in her life, well she says at the moment it’s heading up to Dublin and as her daughter Sheena lives beside the wonderful Phoenix Park, she loves taking baby Liam out for long walks, watching all the deer roaming around and maybe, if time allows, popping into Michael D and Sabina for a cuppa!

“Travelling is something I really enjoy. Covid has obviously brought this to a grinding halt in the past 18 months, but I can’t wait to get on a plane to the sun soon. I love city trips – going to London for a show in the West End, going to New York and seeing a show on Broadway, to Paris or Rome and then to the sun in Marbella,” she adds. On her bucket list is to do a tour of Scotland, especially the Highlands, she wants to tour around and enjoy all that scenery.

“Travelling is always on my agenda, and now we’re starting to get back to normal I’m keen to get going again. I want to go back to New York – I loved every minute there – and know there is so much more of the world for me to see. I’ll be making a start in 2022...”



Flexible milking regimes are growing fast

Thanks to LIC's FarmWise consultant Brent Boyce, flexible milking regimes have been growing in popularity within the New Zealand dairy industry. This increase in popularity has drawn the attention of Dairy NZ who, over the past two years, has been undertaking trials to highlight the key performance requirements of this system for it to be a success.



“ Brent first used a variable milking regime in November 2001 - due to tough climatic conditions and laminitis - and has been advocating it ever since with his clients. With less than 50% of New Zealand farmers now milking twice a day all year-round, the term 'flexible milking' is appropriate as farmers change their milking frequency throughout the year.

The trial that was undertaken by Dairy NZ looked at four different applications of milking frequency to see the impact on milk production. These different applications were full season twice a day, moving to 3 in 2 in March providing 64 days at this frequency, moving to 3 in 2 in December providing 155 days at this frequency and finally having cows on 3 in 2 milking frequency for the full season.

The trial saw a 22KgMS/cow difference between the full twice a day system and full 3 in 2 system with the majority of this loss in solids coming from protein production (8kg drop in fat 14kg drop in protein). It should be noted here that this trial was undertaken on the Lincoln university research dairy farm, which is a 72ha irrigated farm, so the cows were never put under pressure from walking or feed quality of the grass. It's for these reasons that Brent has seen the opposite results when his clients have changed milking frequency. The energy saved through cutting out one trip to and from the parlour every two days has resulted in an increase in milk production on a farm level - and more importantly at a cow level.

Brent is now of the opinion that farmers can implement even greater levels of flexibility into their milking regimes as cows are very resilient and adaptive to change. While Dairy NZ is looking at real farm implications of undertaking a milking frequency of

10 in 7 (this regime sees a set milking time for each day on the 3 in 2, but with all milking across the weekend once a day). Now Brent is taking this further as there are a number of different milking frequencies between fully twice a day and fully once a day. This thinking has resulted in farmers changing their frequency to suit their farms, and this could mean that some paddocks are designated as once a day paddocks due to their contour or the steepness or distance of the tracks to access these paddocks. It is through this implementation of this concept that Brent is seeing an increase in production.

An issue that is met by dairy farmers the world over is about attracting and keeping labour. This is partially due to the fact that farming is a seven day a week business and that we live in a weekend oriented society. To compete against other industries, dairy farmers need to provide their staff with competitive work hours. This can be met through either increasing labour levels to allow for all staff to get regular time off, or by reducing the workload to free up time for all staff to get regular time off. So is implementing a flexible milking regime the answer going forward to provide a better work life balance for staff?

The attached table shows the number of milkings that are saved and the associated hours for different milking regimes. When we focus on the red column, this regime reduces the number of milkings by 133 within a year, and of these, 52 will be at the weekends. If these only required one relief milker then there's a saving of £1,300 (at £25 per milking). For those who struggle to get relief milkers this reduces your reliance on them, and also has the ability to move your milking times to a time of day that opens you up to more potential workers.

The benefits are not only felt by the staff but also the cows. Through undertaking a milking regime shown in the 10in7 column in the attached table, you'll also have the benefit of improved body condition score of the cows, and mating performance. With over half of the herd having a period of once-a-day milking, this will help to reduce the level of condition score loss at the beginning of the season. Leaving these cows better placed to meet required condition score come mating and therefore get in calf. Moving the cows to 10 in 7 and then once-a-day will help to ensure cows are at the correct body condition score come drying off, as they'll naturally put on more condition under these regimes. In turn this could result in achieving more days in milk.

For many, these innovative approaches to structuring milking times and work levels have not impacted on production as much as you might expect. Some of this can be explained by the geography and layout of the farm as mentioned above, the rest has come down to science. LIC scientist, Steve Davis, explains that at about 16 hours after milking, milk production starts to decline and then recovers slowly when the cows



Steve Davis

			MILKINGS PER PERIOD				
Months	Days	Period	TAD all season	OAD TAD 10in7 OAD	TAD then OAD	OAD all season	
Production vs TAD			100%	100%	95%	90%	
1 to 21	Aug	21	42	21 OAD	42 2AD	21	
22 to 31	Aug	10	20	20 TAD	20	10	
All	Sept	30	60	60	60	30	
All	Oct	31	62	62	62	31	
All	Nov	30	60	60	60	30	
1 to 20	Dec	20	40	40	40	20	
21 to 31	Dec	11	22	16 10in7	11 OAD	11	
All	Jan	31	62	44	31	31	
All	Feb	28	56	40	28	28	
All	Mar	31	62	44	31	31	
1 to 15	April	15	30	21	15	15	
16 to 30	April	15	30	15 OAD	15	15	
All	May	31	62	31	31	31	
Total Milkings			304	608	475	446	304
Hours per milking*				3	3.1	3.2	3.5
Milkings saved vs TAD					133	162	304
Total Hours Milking			1824	1472	1427	1064	
Hours saved vs TAD			-	352	397	760	
Total Days Milking			76	61	59	44	
Days saved vs TAD			-	15	17	32	

*Includes getting cows and washup

are next milked. So, on a once-a-day regime, milk production is slowing in the last 8 hours of the 24 hours but then recovering for the first 8 hours of the next 24 hour interval.

In addition, the rate of loss of udder tissue increases which 'locks in' the

yield loss for that lactation. The advantage of 3-in-2, or its variations, is to keep the milking interval as short as possible (usually 16-18 hours), which minimizes the loss in production.



On November 17 we will be hosting a webinar with Brent and Steve speaking on their respective experience and knowledge around flexible milking regimes, followed with a live question and answer session. If you have any questions in the meantime, please contact your local Pasture to Profit consultant, FSM or Breeding Advisor. Look out for the invite on the LIC UK and LIC Ireland Facebook and Twitter pages or email schubb@liceurope.com for the UK or jtobin@liceurope.com if you are in Ireland and would like to join.

CONTACTS

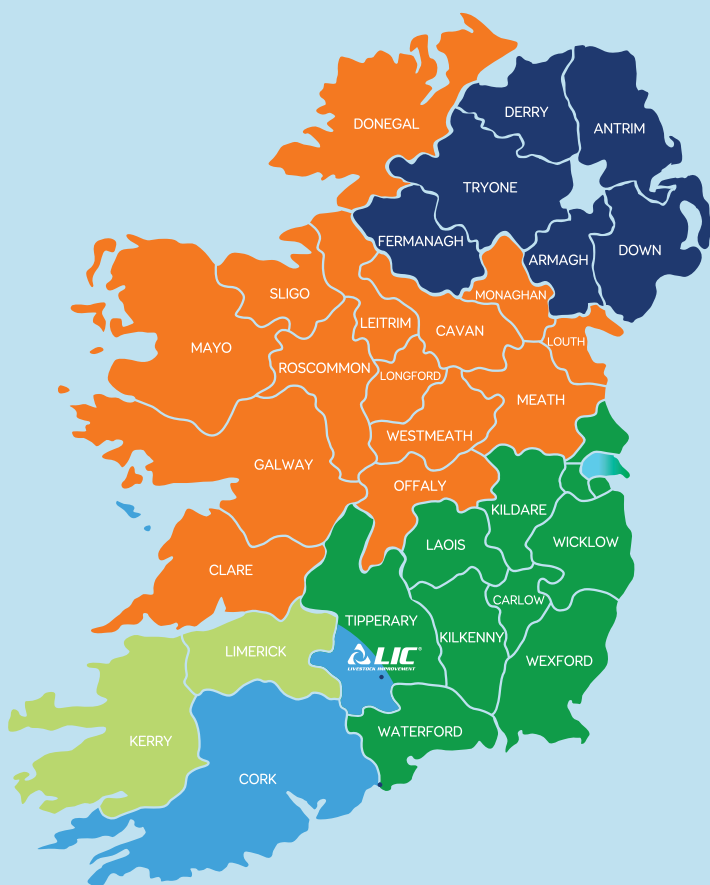
LIC Ireland Ltd

Carrigeen Industrial Estate
Cahir, Co Tipperary, Ireland
T 052 744 2517
F 052 744 5731



Eurogene AI Services (IRL) Ltd

Carrigeen Industrial Estate
Cahir, Co Tipperary, Ireland
T 052 744 2517
F 052 744 5731



AI Services (NI) Ltd

T 028 9083 3123
F 028 9084 2640
E info@ai-services.co.uk



DAVID POWER

LIC Snr Breeding Advisor - Midlands South East
T 087 937 2553
E dpower@liceurope.com



LEONARD GAVIN

LIC Breeding Advisor - Midlands North East & West
T 086 142 8830
E lgavin@eurogeneaiservices.com



AIDEN CUNNINGHAM

LIC Breeding Advisor - Cork & South Tipperary
T 086 174 5666
E aiden@eurogeneaiservices.com



JEREMIAH DALY

LIC Breeding Advisor - Kerry & Limerick
T 087 399 5967
E jdaly@eurogeneaiservices.com



MAIREAD HAYES

Telesales
T 052 744 2517
E mairiad@eurogeneaiservices.com



ANGELA KENNEDY

Telesales
T 052 744 2517
E angelak@eurogeneaiservices.com



JOHN TOBIN

System Manager - LIC Ireland
T 086 410 7786
E jtobin@liceurope.com



For the latest information and bull teams visit our website:

www.lic.ie