THE BULLETIN

EYE TO THE FUTURE | SPRING 2018

It's interesting to contemplate the journeys we go on.

As a farmer with a particular interest in genetics and the value of herd improvement, I was a regular reader of the *Premier Sires Bulletin.*

In 2011 when I joined LIC as part of the breeding scheme, I contributed regular articles to the evolved publication of *The Bulletin* relating to my areas of responsibility (being the Jersey and SGL breeding programmes).

For one that has always been an advocate of the value of good cows, a strong supporter of co-operatives, and specifically proud of the significant contribution that LIC (and formally LIA) has made to dairying in New Zealand, it gives me a great deal of pleasure to introduce this latest edition of *The Bulletin* to you in my current role as General Manager of NZ Markets.

Reflecting on my 27 years of receiving a milk cheque, I contemplate the whirlwind of industry change. I've witnessed a doubling of the scale of the national herd – for 23 consecutive years that growth exceeded 100,000 cows per year. I've watched the average herd size almost triple, and with this unprecedented cow growth, we now also see 30% fewer herds in New Zealand than in the late 1980's.

Come forward to 2018 and as an industry we have to acknowledge 'cow peak' and responsibly re-position our farm businesses accordingly.

I look back at the period between 1990 and 2010, and come to the defined conclusion that cow growth fuelled the productivity and prosperity of our sector. They were incredibly good times and I pinch myself at the thought of some of the opportunities we were able to explore and take.

There will be further growth opportunities in some regions, while in others environmental considerations and the pressure of alternative land use will result in real down-side risk to cow numbers. The outcome is 'cow population equilibrium' – in the medium term, as much upside as downside.

As an industry we cannot stand still, no one else around the world has an appetite to do so.

New Zealand dairy must strive to maintain an edge. The cow growth days meant we slipped into 'a cow's-a-cow' mentality – and cow quality was less of a consideration. This is changing, I'm grateful to see that increasingly farmers are acknowledging that if we're not going to be milking more cows in the future, we're going to have to be milking better cows.

Future productivity will have to be achieved efficiently, and we must be forever mindful of the margin we make from a kilogram of milksolids. The cost of production remains a defining metric.

The difference between the top and bottom quartile of all herd tested cows in New Zealand is 160 kgs of milksolids (note the data is corrected for the cow's age, her breed, and the location at which she is milked). This difference is significant and offers a real opportunity in the short to medium term. I have absolutely no doubt in my mind that the next opportunity to advance the fortunes and competitiveness of our industry is cow quality – the substance that sits within the value of herd improvement is significant and we have to go after it.

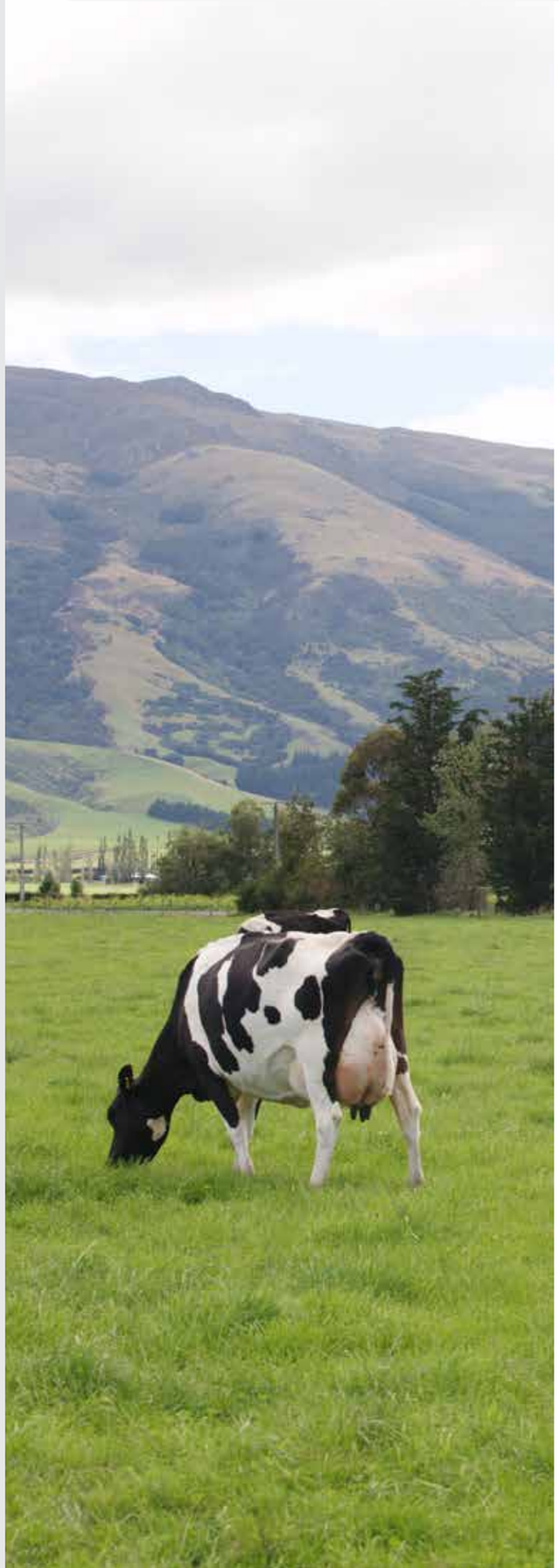
A recent revision of LIC's strategy identifies a real focus on the core of what we do. We want to connect you as shareholders to the value of AB, herd testing, information, software and technology. We've got to do the basics well, but importantly we must also have an eye to the future.

I encourage you to take the time to capture the value that is within this publication, the articles are on-point, relevant, and they both deal with challenges as well as identify opportunities.

I want to acknowledge the passion and capability of my colleagues that share their views and expertise for your consideration. When you look forward you can be excused for identifying the obstacles and challenges, for us as dairy farmers and for our dairy farm businesses, but as an organisation we are increasingly motivated to take these on and we want to be a meaningful part of your future.

I wish you all the best for the spring mating season and I encourage you to work closely with us as we take on the future together.

Malcolm Ellis
LIC General Manager of NZ Markets



CONTENTS

Milksolid matters: Fat-to-Protein values get close to parity

by Greg Hamill, LIC genetics business manager.

In early September, New Zealand Animal Evaluation Ltd (NZAEL), a subsidiary of DairyNZ, officially released the new economic weightings that are set to contribute to overall Breeding Worth calculations from early 2019.

Greg Hamill

This was an excellent decision by NZAEL, as traditionally these haven't been released until February, when the spring mating season is complete for dairy farmers.

Although the changes still don't come in to effect until February 2019, the move is pragmatic, because it allows New Zealand dairy farmers to make informed decisions (i.e. bull selections) before the mating season gets underway.

The economic changes also better-align world commodity prices that our milk processors receive with the various milk/animal components that make up breeding worth.

Before the September announcement, LIC's genetics and sire selection staff had already selected its 2018 Premier Sires teams based on the likely changes NZAEL would make, and had ranked the bulls accordingly on the spring edition of the Premier Sires Wall Chart (sent to LIC farmers in August).

Now the official economic values have been released, we're able to include a new set of BWs for the bull teams (and individuals) that LIC markets: You will note the 2019 BW columns in the tables pp 14-22.

Right here, right now

The table below summarises the movements for each LIC Premier Sires team, with 'current' column indicating how the teams sit now, and the '2019' column showing how the teams will reposition in February 2019 (under the officially-released economic rankings, all other factors being equal).

Breed changes are a reflection of the economic values' impact on the traits associated within each breed, and breed choices remain the domain of LIC's farming customers.

But whether you're looking at current BW or 2019 BW, LIC remains a strong competitor in all three breeds it markets: Holstein Friesian; Jersey, and; KiwiCross.

Another factor that remains the same is that Premier Sires teams deliver LIC's best available genetics, through its liquid technology, on any given day, regardless of breed.

	Holstein Friesian		Jersey		Kiwicross™	
	current	2019	current	2019	current	2019
Daughter Proven	191	157	217	226	203	182
Forward Pack	209	172	225	233	232	210
A2A2	180	137	N/A	N/A	212	193

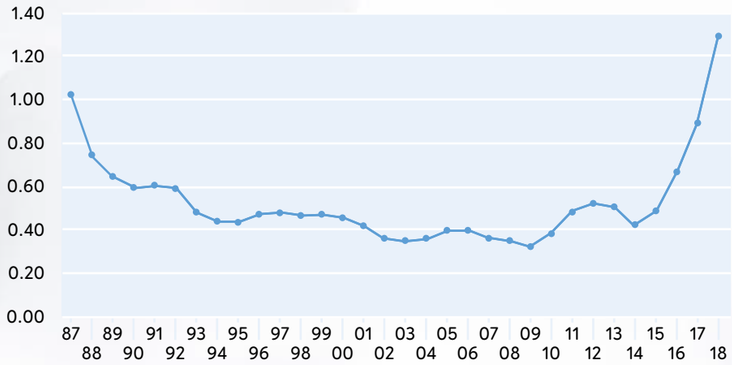
The graph below shows how the ratio of fat to protein has risen significantly since 2016.

Fonterra's current three-year rolling average for value component (VCR) ratio sits at 1.3.

Although likely to rise over the next few seasons, the current VCR of 1.01 that feeds into BW (which NZAEL is using) reflects a 'long term view' of fat values; over the long-term these values are expected to plateau and move closer to parity with protein values.

BW remains the best indicator to use among farmers who want to breed progeny that are profitable and efficient convertors of feed into what our milk processors are paying, and being paid, for.

Ratio of milkfat to protein prices



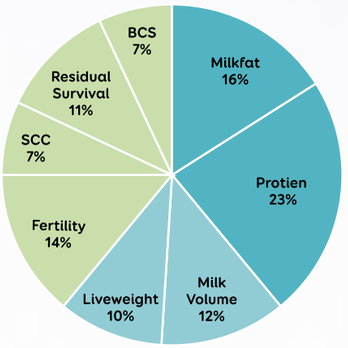
What's driven the economic changes?

Cows naturally produce more kilograms of fat compared to protein. The base cow (that the industry uses as a benchmark in BW values), born in 2005, which came into milk in 2007, produced 218kg of fat and 174kg of protein when fed five tonnes of dry matter.

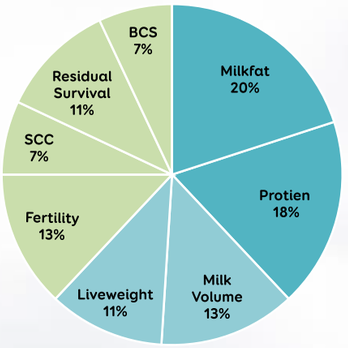
With processors receiving more money for fat than protein, the new weightings for 2019 better reflects long term predictions of where fat is likely to sit relative to protein.

Effective emphasis on the individual traits within Breeding Worth (NZAEL graphic, reproduced with permission from DairyNZ).

2018



2019



Wairarapa Moana
A herd improvement journey

Maori Corporation Wairarapa Moana operates 10 managed dairy farms, two sharemilked dairy farms, and three dairy support farms, from its Mangakino, South Waikato, base.

More than 10,000 dairy cows are managed across the various properties.

During the last five years Wairarapa Moana has worked alongside LIC to drive improvements in the farms' herd records, in-calf rates, and overall bottom lines.

A significant turnaround in the operation has resulted – for example between the spring matings of 2013 and 2017, Wairarapa Moana's in-calf rate shot up from 59% to 72%; alongside this they managed diminishing use of intervention (CIDRs) at mating, down to 13% from 20%.

Key to results like the one above is of course commitment and hard work from the entire Wairarapa Moana team, but the catalyst was its management's belief in the power of quality-data and superior genetics.

59 to 72 within 5 – how's that?

Keen to gather specialist advice back in 2013, the Wairarapa Moana team (led by its operational group) was keen to investigate a new reproductive approach that could better its relatively lacklustre in-calf rates of 59%.

It was acknowledged that raising the in-calf rate would begin with good data, so the farm teams set about working with LIC to ensure all herd records were brought up-to-date, with ongoing checks to keep the records well maintained.

LIC helped Wairarapa Moana interpret the data so trends and opportunities could be communicated and understood across the group; the more-reliable information helped farm teams pinpoint factors that were hindering in-calf rates.

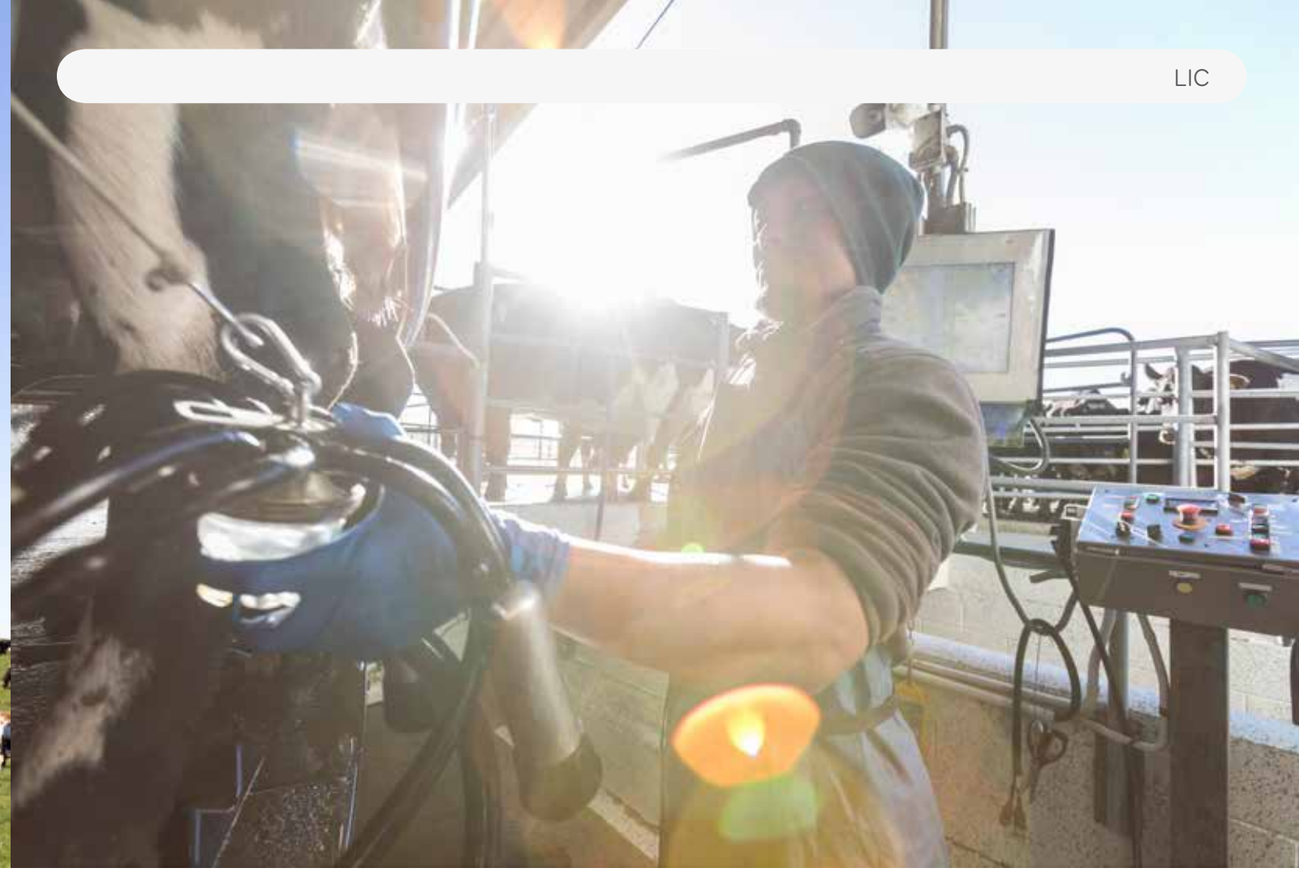
Downshifting, refining, and revving it up

Heat detection was identified as an area for improvement, together with a renewed focus on young stock rearing, and better attention to body condition score (BCS) at key times of the season.

The farm systems also changed from high input (system 5) to medium input (system 3).

To complement the farm system changes, LIC reproductive and genetics specialists encouraged a breed mix change: It was decided a new mating plan would be implemented to achieve smaller, more efficient animals, which would offer better production efficiencies under the new system.

> "Two years ago we became self-sufficient in breeding replacements, and now we have surplus young stock to sell, it's great to be looking at new opportunities and finding ways to generate extra revenue for Wairapapa Moana. Just as important is seeing the excitement from the team of improving their results year-on-year."
>
> - **Wairarapa Moana senior management**



All young stock weight gains, against targets, were monitored through MINDA Weights.

Herds hitting BCS targets were achieved with support from MINDA, and this information formed the basis of farm management and feed-strategy decisions.

Meanwhile, heat detection was brought in to sharp focus, with delivery of a detailed staff training programme, supported by teams from LIC, DairyNZ and vets (South Waikato and Tokoroa District)

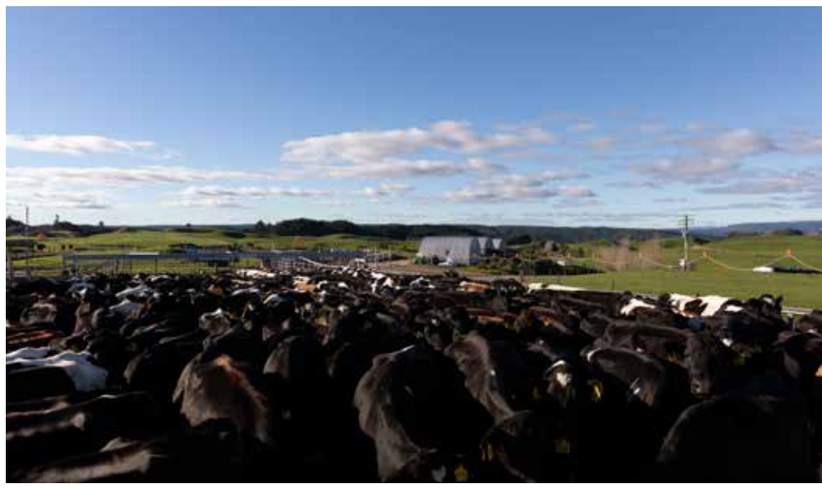
Neville Cook, LIC Key Account Manager, said better heat detection contributed greatly to the improved conception rates across Wairarapa Moana farms:

"The team undertook training so everyone became experts in identifying cows ready for insemination.

"Good data management and a variety of heat detection tools continue to provide support.

"For example, Farm Six is now using Protrack™ Heat to make the process even more efficient."

> "Creating a culture that is comfortable with trialling new approaches has been the biggest shift at Wairarapa Moana. Now we have a team and structure that can change when there is a risk or an opportunity and everyone wants it to be better than it was before. I'm really proud of the team, everyone has been part of all the changes, together with our owners and experts like LIC."
>
> - **Khardinn Wereta, Manager Farm 6**



What's your mating plan response in this new era of biosecurity?

By Jair Mandriaza, reproduction solutions advisor

Jair Mandriaza

LIC reproduction solutions advisor Jair Mandriaza is a key member of the National Reproductive Strategy Group, formed in response to the current Mycoplasma Bovis disease incursion in New Zealand.

Also among the group are representatives from Federated Farmers, Dairy Cattle Vets Association, New Zealand Veterinary Association, CRV, DairyNZ, Fonterra, Synlait, and Open Country.

This article was developed by the group, and is designed to provide some guidance to farmers who are considering their short- to medium-term mating options as farm biosecurity takes on greater emphasis.

Under the current state of heightened biosecurity in New Zealand, some farmers are looking at changing mating management this season.

Whether you're thinking of:

1. combining artificial breeding (AB) and natural mating bulls;
2. extending the AB period to reduce the number of bulls needed;
3. re-starting AB in the last few weeks of mating, or;
4. thinking of implementing AB through the whole mating period,

the risks and benefits of each option should be carefully considered for your particular farm.

Making use of your trusted network of rural professionals is a good start: Most should be able to call on, and share the experience they have with clients, in all the mating management categories described above.

The best option is dependent on each individual farm's situation, and there are pros and cons to all of them.

Below are some of the key considerations in using natural mate bulls or extending your AB period.

NATURAL MATE BULLS

Pros

- Allows a shortened AB period
- Reduces heat detection requirements (staff, heat detection aids etc.)
- Allows mating to occur where AB is impractical (eg. R2s at run-off)
- Can be kept and used for multiple seasons
- Retain some value as they can be sold or sent to the works for a return

Cons

- Biosecurity risk: This can be well managed through testing and/or vaccination with some diseases (ie. BVD), but Mycoplasma bovis presents a more difficult situation
- Cost compared to AB
- Associated bull issues: aggression, lameness, H&S etc.
- Availability of leasing bulls

Advice this season

- Source well-grown yearling virgin bulls directly from closed herds wherever possible (i.e. most stud farms)
- Consider visiting the farm you are buying from and select the animals if behaviour of the bull is a concern
- Ask questions about animal health, animal movements, and biosecurity practices on the source farm
- If you find a bull supplier that your due diligence considers safe, pre-book next year's bulls with them too
- Investigate the NAIT history of any bull purchases/leases
- The risk of service bulls carrying Mycoplasma bovis is likely to be low, particularly on farms that have had no signs of disease and that have minimal stock incoming from other farms. Discuss with your vet whether getting bulls tested prior to purchase/use should be considered
- Quarantine bulls after arrival for at least seven days, and ideally two to four weeks prior to putting with cows or heifers

Rearing your own service bulls for future seasons is an option, but take into account the various inputs of money, effort, grazing, and hassle managing bulls on your milking platform or run-off.

EXTENDING AB PERIOD

Pros

- Reduces risk of introducing disease (as fewer, or no bulls, are required)
- Increases the number of potential dairy replacements
- Opens the opportunity to create extra income from surplus dairy replacements and higher value calves (e.g. beef)
- Potentially increases genetic gain (more selection pressure on replacements is possible)
- Better monitoring of entire mating performance (all matings are recorded)

Cons

- Risk of poorer reproductive performance, especially in herds where performance is not optimal. Talk to your advisor, discuss the checklist below to help identify what your current situation is, and consider whether change suits you in the upcoming season, or if a staged approach should be taken
- Extended heat detection period
- Silent/quiet heats have a higher potential to be missed. Good results rely on maintenance of excellent heat detection throughout the entire AB period
- Fewer animals cycling as more become pregnant, making heat detection more challenging
- Potential for incorrectly inseminating more pregnant cows if reliant on human heat detection (cost, loss of early pregnancies)
- Increased logistical considerations – staffing, heat detection aids, semen and tech

Advice this season

Extending the AB period or going all AB will not be suited to everyone. Before you make the decision, here are some key points to consider:

Checklist

If you don't meet all of these criteria, it does not mean that you can't extend your AB period or adopt all-AB.

However, you will need to have a good solid plan in place for how you are going to mitigate criteria you don't meet, so you set yourself (and your herd) up for a successful mating period.

- **Repro performance is at national average or higher**
  - A 6-week in-calf rate above 65%
  - A 3-week submission rate of 80% or higher
  - A conception rate of 50% or higher
  - Less than 20% short returns
  - Less than 15% cows treated for anoestrous
- **Your herd is healthy and primed to have a successful mating**
  - BVD free (BVD can have strong reproductive performance consequences)
  - No increase in cow health problems through calving (e.g. milk fever and mastitis)
  - First calvers have reached their target liveweight for calving
  - No increase in late calvers
- **You have the skills and staff** to carry out prolonged heat detection: Extended AB or all-AB makes accurate heat detection even more critical, as these can increase heat detection to 10-12 weeks
- **Seek advice:**
  Talk to your farm advisor, vet, and a farmer that has already extended AB or gone all AB. Also, work out if the cost-benefit fits your plan

Tips

- Communicate. If you decide to extend your AB programme, communicate this to all of those involved in making your plan happen: Your vet, your semen supplier, your AB tech, your rural professionals and your team on farm
- If you increase the use of synchrony of heifers and cows, plan ahead to cater for the increase on the numbers of cows calving within a very short timeframe, from a feed demand point of view, in the following calving season
- If you plan to change the approach with your heifers and use AB, discuss how to maximise their performance with your vet. Liveweight, general health, and BVD control, as well as the practicalities and logistics of synchrony programmes, grazier facilities, and technician services, should be taken into account
- Further information on areas affecting a herd's reproductive performance and management options can be found in the *InCalf* book. A copy of the latest version of the book is available at dairynz.co.nz/incalf

LIC semen is tested for all-clear before arriving on-farm

LIC is continuing to help protect the national herd from the Mycoplasma bovis cattle disease.

To date, extensive testing of LIC's bulls available for artificial insemination has not resulted in any sign of the disease.

The cooperative has tested more than 5000 samples from its bulls dating back to January 2017. All have been clear.

But LIC is not taking anything for granted.

To provide its customers with added reassurance this spring mating period, LIC has been carrying out daily semen testing since 3 September.

This coincided with the start of LIC's Premier Sires fresh semen service. Testing is set to continue through to December.

This comprehensive, industry-leading, approach to combat the threat of Mycoplasma bovis enables LIC to test every semen collection and confirm results before any semen straws are distributed to farmers.

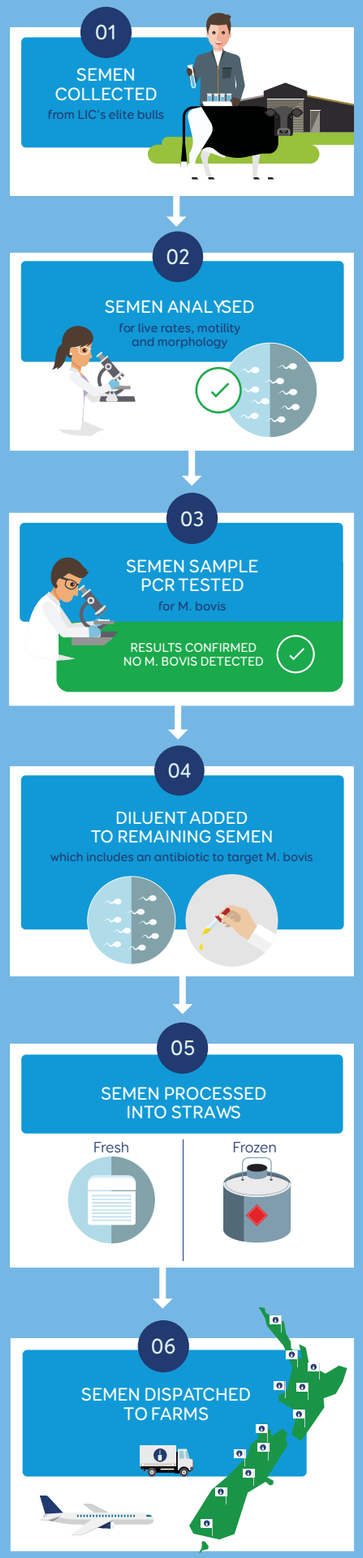
LIC is doing this to provide its customers with confidence in the LIC semen that arrives on-farm.

Daily semen tests are carried out in the LIC diagnostics laboratory, utilising the same PCR test the Ministry for Primary Industries uses. The test is highly-sensitive and will detect if Mycoplasma bovis is present in the semen.

Testing comes on top of other measures implemented, including the addition of an antibiotic to the fresh and frozen semen diluents; this is designed to further reduce transmission risk of Mycoplasma bovis via semen. Semen remains certified for use in organic farming.

LIC is in a good position to adapt and invest in these changes (steps 3 & 4 on the adjacent info-graphic) for your herd's protection. To avoid price increases this season, the cooperative is absorbing the additional costs associated with these extra measures.

LIC believes the combination of its strict animal management protocols, stringent testing, and antibiotic use, is the best way it can help protect the national herd from Mycoplasma bovis.



IS A2/A2 4 U?

During the last few years LIC has witnessed increased interest in bulls that carry two copies of the A2 protein gene.

This was heightened earlier this year when Fonterra announced a strategic relationship with the A2 Milk Company; after this, more than 10% of LIC's customers switched their breeding plans to one of the new liquid A2A2 Premier Sires teams (see the A2A2 teams on pages 17, 19, and the Jersey team, which are predominantly A2).

An animal receives one copy of the gene from its dam and one from its sire. Therefore an A2A2 animal will always give one copy of A2 to its progeny, while an animal that is A1A2 can pass on either copy.

Farmers who want to start breeding towards A2A2 for either:

- being able to currently supply A2A2 milk, or
- for future-proofing their herd asset,

should consider mating using LIC's Premier Sires A2A2 teams.

Using A2A2-only sires increases the frequency of A2A2 progeny within the herd.

A1/A2 cow + Full A2 Bull

Half the resulting offspring will be A2/A2, and in the remaining (half) cases the dam will pass on the A1 gene to its progeny

	A2	A2
A2	A2/A2	A2/A2
A1	A1A2	A1A2

Without genotyping, this approach could take up to 20 years to achieve a virtual A2A2 herd (i.e. there will be progeny that would inherit an A1 gene).

But for a faster result, genotyping the herd is available: This allows farmers to identify all cows within the herd that are A2A2, allowing priority to be given to those animals to breed placements from (this could also incorporate yearlings).

Talk to your local Farm Solution Manager if you'd like to know more about the A2A2 Premier Sires team, or about genotyping animals.

From the breeding desk

by Simon Worth, LIC livestock selection manager

In the winter issue of *The Bulletin* we highlighted and acknowledged that times were changing, and indeed the value of milk components is most certainly an example of that.

The change in respect to the value of fat relative to protein is a fundamental one.

LIC's sire selection team is tasked with delivering 'the cow of the future', so we're forever evaluating and assessing what it is that farmers want from their cows 5 to 10 years from now.

This both centres on how the cow is 'put together', including its behaviour, and what breeding worth may look like at that (future) point-in-time.

To do this LIC's sire selection team uses an internal index to breed bulls: Called our Livestock Selection Index (LSI), this tool keeps us ahead of the game.

In the past, we've witnessed the weighting for fertility within BW increase significantly. Thanks to our LSI, we'd already increased the fertility weighting years before it was officially sanctioned and used within Breeding Worth.

Now, we're watching as the value of fat changes considerably. Again, the weighting (of fat) has already been anticipated within LIC's livestock selection's LSI, meaning BW has effectively just caught up with what we've been driving at in our selections.

And now it's graduation time!

The journey is near-complete for the 15-codes – that is, bulls that were purchased for LIC's Sire Proving Scheme (SPS) back in 2014.

And anyone familiar with LIC's proving scheme would acknowledge SPS as among the most robust progeny test programmes in the world.

Used within contracted herds in 2015, the majority of the daughters of these bulls have now been herd tested at least once. Many of them have also been inspected for conformation traits, including assessment by the farmers milking them on their suitability for the milking routine.

Although it's still early days, some of the graduates are deviating nicely away from the pack, staking their claim to be being picked as a 'Spring bull'.

These new boys are set to bolster your cooperative's strength across the breeds, and add enormous value as members of the LIC Forward Pack.

The new graduates that our sire selection team highlights across the next few pages are bound to impress.

On behalf of the entire LIC team, livestock selection whole-heartedly thank our bull breeders!

Sweet Success

by Simon Worth, LIC livestock selection manager

Simon Worth

115080 Westedge VHR SWEET-AS -S2F

Dairy NZ's 'Ranking of Active Sires' (RAS) list, published after each Animal Evaluation (AE) update, currently has your cooperative basking in some outstanding statistics. As it stands 9/10, 18/20 and 43 of the top-50 black and white bulls belong to you!

As a new cohort of bulls emerge, these impressive stats look set to continue.

Of the new boys, it's a pleasure to highlight those selected as 'Spring bulls' in this year's Forward Pack.

115080 Westedge VHR SWEET AS - S2F

For farmers opting in for Forward Pack – you've got a SWEET-AS addition to the team!

Bred by Paul and Jill Langdon of Whakatane, and aptly named by daughter Kate, SWEET AS is a credit to the Langdon's passion for their cows and their belief in the cow family.

This family has already delivered 114026 Westedge OPTIMUS PRIME – a half-brother to SWEET AS and a bull who (other than being a little low in his fertility breeding value), would be more than marketable. We're continuing to graze Optimus Prime through until we gain more-reliable fertility information on the three-year-old daughters.

The maternal sire pathway within this Sweet-As pedigree has a stack of breed legends (and LIC Hall-of-Fame inductees), including Fairmont MINT-EDITION, McFarlanes DAUNTLESS, and O'Byrnes EAMONN.

The dam behind this graduate is a family favourite – Rosie. This girl has been nothing but consistent, with her six lactations to date averaging an LW of 375. This 'first row' cow has conformation just as solid, with a very tidy udder, excellent capacity, and quality dairy type.

On the top line of this pedigree is 109142 Van Heuvens Remedy S1F who, given his high fat to protein ratio, has made somewhat of a resurgence.

SWEET AS takes top honours as the highest BW graduate, and much of that is credited to simply outstanding production values – currently at 48 kg fat and 38 kg protein.

With a BV of only 785 for milk, he's demonstrating his ability to sire truly efficient converters of feed into milksolids. This production proof is already based on 93 daughters across 33 different herds.

A pool of 47 daughters have also been assessed for traits other than production. Based on this, it's fair to say the daughters look very sound, and especially impress through the udder support. What is also evident is that farmers milking these girls rate them extremely highly – reflected in the outstanding overall opinion score of 0.73

His A2A2 status will ensure SWEET AS will be hugely popular.

115054 Meander SB WINGMAN-ET S2F

Robert and Annemarie Bruin of the deep South have already tasted success through the likes of Meander ROCKETMAN.

However, they've certainly delivered something special this year in WINGMAN.

This highflyer is a combination of two truly impressive cow families.

On the maternal side, the dam of WINGMAN (Meander FMI April) is an outstanding daughter of Farside M ILLUSTRIOUS. This girl impressed right from the very start, not only from a production standpoint, but through her very classy conformation.

This is now reflected in an official classification of VG 87.

In fact April continues an exciting cow family. The next two dams (by Oman and Skelton) each classify VG 88 and continue to earn their place in the herd after nine lactations each.

The sire of WINGMAN is Spring Tralee BOSS – a bull utilised early due to his genomic evaluation. This OVATION son stems from a full sister to BEAMER and BUSTER, which, in combination with this exciting Meander cow family, has certainly clicked.

Solid production traits, based on the 81 herd tested daughters to date, are accompanied by an incredibly impressive somatic cell BV of -0.64.

The conformation side of the equation is as expected with udder scores a real standout.

With breeding values of 1.16 udder support and 1.03 udder overall, WINGMAN is amongst the very best. Although his milking speed is on the negative side, it's encouraging to see a positive overall opinion score from farmers milking the daughters. Note this guy is predominately white.

For those of you accessing these bulls through Forward Pack and Alpha nominated – enjoy!

Daughter of 114026 Westedge OPTIMUS PRIME

Daughter of 113014 Spring Tralee BOSS-ET S3F (WINGMAN's sire)

Other bulls to watch

Code	Name	BW	2019 BW	REL	Sire	Breeder
115062	PAALVASTS MT CYCLONE S2F	179	149	67	MITCHELLS WT TYPHOON S2F	LJ & SM Paalvast Limited
115089	GREENWELL GB FOIL-ET S3F	177	130	64	GREENWELL FI BLADE S3F	Greenwell Farms No 1
115012	PORTERS ZP PROMISE-ET S2F	169	136	68	ZINKS LI PROSPERITY S2F	B & J Porter
115078	TAFTS WM GENTLEMAN-ET	168	122	65	WOODCOTE TF MAXIMISER	Seaspray Farms Ltd
115040	BURCHS CF SUPERNOVA S2F	167	134	66	CHARLTONS FI FINALCUT S2F	Hans & Gabriela Burch
115046	TRALEE GB RESONATE-ET S3F	160	129	70	GREENWELL FI BLADE S3F	Kauana Dairy Ltd

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Jersey Dominance

by Casey Inverarity, LIC bull acquisition manager

Casey Inverarity

What a big year for the Jersey breed! The fat story continues and is now being translated into strong Jersey semen sales.

It's great to see all the hard work involved in breeding these elite sires four years ago is paying off; it puts the Jersey breed in an even stronger position than a mere 12 months ago.

Let's reflect on where we were then. 2017: LIC farmers own the top Jersey bulls on the *Ranking of Active Sires (RAS)* list, with three of the top-five positions within the Jersey RAS list. Today, LIC Jersey sires occupy all five of the top-five positions on the same RAS list.

2017: Of the top-30 bulls on the RAS list across all breeds, 14 were Jersey bulls. Today, the industry delivers16 Jersey bulls to the top-30 mix. With more than half the bulls on the RAS list now straight Jersey, the breed is certainly punching well above its weight – particularly given the context the breed makes up just 10% of the national dairy herd.

I'm proud to showcase the two following Spring bull graduates, which are expressing themselves early on as bulls that will deliver the goods. Arrieta NN Degree was recognised as having huge potential as a sire-of-sons, and in the progeny outlined below he's certainly endorsing this view.

315058 Bonacord AND Barker

Barker is currently at 238. Based on this, in February 2019, his BW is likely to make him the highest-ranked new graduate across all breeds.

A pedigree that is well known in Jersey circles, this family goes back to the prestigious Cardrona stud.

The Cardrona stud is arguably among the biggest influencers on the Jersey breed over recent times, and its genetic legacy continues to deliver for Jersey breeders nationwide – but perhaps none with greater success than the Allison family from Bonacord farms in Outram (with a fine family descending from Cardona, Fjord and Bethany).

This is a family that has consistently delivered. We have now had six bulls graduate from this family averaging 226BW. Simply outstanding.

It's no wonder that Barker is delivering when he is backed by four maternal generations averaging 220BW and 320 PW.

Barker, with 94 herd tested daughters and 48 TOP daughters to date, offers exceptional production. His 30 kg fat BV (where the Jersey breed naturally delivers) is complemented by outstanding protein production. At 11 kg protein BV, Barker is up with the best of any Jersey bulls LIC is marketing today.

He also delivers solid capacity, and farmers clearly love milking his daughters.

315045-Glenui Degree Hoss ET

Hoss offers daughters with the complete package.

His Bowie dam has completed nine lactations, is classified excellent, and in 2014 was described by Malcolm Ellis as the 'best conformation cow seen in Taranaki'. Not only does she have the looks, but she backs this up by possessing a very desirable PW of 476.

Hoss, at 204 BW (215 BW 19), is set to deliver daughters which improve in every TOP trait.

For example, he offers the ever-desirable larger stature, solid capacity, great udder conformation, teat placement, and rump angle correction.

Tony and Lesley Landers of Hawera and their Glenui stud are fast-becoming a regular in the Jersey bull breeding scene. If Hoss is the start of what's coming, I can't wait to see what else is in store!

LIC's bull acquisition team will be utilising these bulls NOW to create the next generation of sons.

I encourage you to jump in and use them also. They'll be available alongside current Premier Sires Forward Pack bulls and through Alpha nominated.

Rest assured that absolute genetic gain is being delivered from LIC to your farm.

Bring it on!

Maternal Grandam of 315058 BONACORD AND BARKER

Dam of 315045-Glenui Degree HOSS ET

Other bulls to watch

Code	Name	BW	2019 BW	REL	Sire	Breeder
315052	GREENMILE CAMPAIGN ET S2J	224	229	70	ARRIETA NN DEGREE ET	B & B Jensen
315008	PUKEROA AND BARATONE ET	222	228	67	ARRIETA NN DEGREE ET	A&V Lockwood-Geck
315049	KAIMATARAU TERRIFIC PUNCH	204	201	65	LYNBROOK TERRIFIC ET S3J	Pedley Family
315056	LYNBROOK AD TIMELESS ET	203	207	66	ARRIETA NN DEGREE ET	S & N Ireland
315020	PURIRI MANZ APEX	202	204	62	PUKEROA TGM MANZELLO	S & N Wilson
315002	CRESCENT MAIMAI MAYHEM	197	220	64	GREENMILE MM MAIMAI ET	M & D Townshend

KiwiCross – The best of both worlds

by Taylor Connell, LIC sire analyst

Taylor Connell

Four years ago LIC purchased 83 of the very best Crossbred bull calves in the country. Now we're seeing 'the best of the best' emerge, promising positive influence on dairy cow performance for generations to come.

Here are two outstanding young bull graduates, both of which are pulling ahead of their cohorts – enough to earn themselves a spot in LIC's Premier Sires KiwiCross Forward Pack.

Both are also available through Alpha nominated.

515019 LYNBROOK KNIGHT ET:

A familiar prefix in Jersey circles, it's fantastic to see the Lynbrook Stud of Steve and Nina Ireland graduate our top KiwiCross bull at a huge 245 BW.

Knight is the first of our Daredevil sons to graduate.

Daredevil unfortunately died before entering the Sire Proving Scheme (SPS), but due to his high ranking it was decided to utilise him in embryo transfer (ET) work over the most-elite cows in the country.

It's fantastic to see this decision has paid off in spades!

BW isn't the only factor working in Knight's favour.

Breeder Steve Ireland has for-warned farmers to 'widen their dairy sheds' – because at 1.28 Knight has the highest capacity BV of all NZAEL-enrolled crossbreed bulls.

This – combined with production, body condition score, temperament, A2A2, and udders – is sure to make Knight a popular choice.

Knight is set to continue a legacy of cows that just love to milk – in fact when looking at Knight's pedigree, the average PW of the last four generations on the maternal line come in at whooping 314 PW. Truly exceptional.

Congratulations to Steve and Nina Ireland for breeding yet another Premier Sire!

515058 KAHURANGI IZABULL

LIC has purchased three bulls from the Kahurangi Stud of Peter and Deb Langford, and for two out of three to make Premier Sires is nothing short of outstanding!

At 229 BW, Izabull comes from a different cow family to previous Premier Sire Kahurangi GB Topgun, and is one of our first Ramada sons to graduate.

The mating of Ramada (used as a genomic bull) over a powerful Murmur dam has given rise to a well-balanced sire in Izabull – production, temperament, udders, and low SCC are a mere snapshot of some of the traits Izabull daughters exhibit.

If they're anything like their great-great grandam, they'll be sure to hang around.

This Gloaming SS Forever cow, born in 2000, has completed an outstanding 16 lactations and still has a BW of 196 and PW of 314. Indexes this high, on cows this age, are spread few and far between. It all goes to show the exceptional genetics at play in this pedigree.

Well done to the Langfords for Premier Sire number 2!

With nine of the top-10, and 22 of the top-25 on the crossbreed Ranking of Active Sires list, the addition of the boys described above (as well as their peers, as more herd test data continues to be added) is almost certain to increase the already-strong position LIC has in this space.

During the coming months LIC's bull acquisition team looks forward to tracking these new graduates, including those in the table below.

Daughter of 511053 Ramada

Daughter of 511053 Ramada

Other bulls to watch

Code	Name	Split	BW	2019 BW	REL	Sire	Breeder
515083	MCCAOSS MAJESTY	F13J3	225	187	63	HAZAEL DRACO MONARCH S3F	J & S Ross
515068	WOODWARDS SPOT ON	F9J7	207	191	63	VANSTRAALENS VIBE	R & S Woodward
515011	LYNSKEYS LIAM	J9F6	203	181	64	PRIESTS SOLARIS-ET	Lynskey Family
515037	MCINTYRES TRIPWIRE	F9J7	197	181	65	HOWIES CHECKPOINT	N & L McIntyre
515062	DUGGANS GAMEPLAN	J12F4	180	184	68	PUKEROA TGM MANZELLO	R & J Duggan

Q.

How can you improve the traits important to you at a faster rate?

A.

Premier Sires

LIC®

Holstein Friesian

2018 Holstein Friesian **Daughter Proven** Team

Sire		BW/Rel%
111037	SAN RAY FM BEAMER-ET S2F	242/96
113009	HAZAEL SH DISTINCT-ET S1F	232/88
114007	BUSY BROOK WTP VECTOR S3F	240/83
111036	ARKAN FM BUSTER-ET S2F	205/93
112034	CARSONS FM CAIRO S3F	209/98
114032	WOODCOTE FI MASTERMIND	196/83
111067	BYREBURN PF ETERNAL S2F	186/98
111011	ASHDALE FM KELSBELLS S1F	207/94
113120	BOTHWELL WT MAXIMA S2F	170/98
114089	ARKAN RAN BANDITO S3F	177/83
114041	MOSSOPS GB PLAYMAKER	176/82
114023	MITCHELLS KE HUSTLER S2F	178/82

Sire		BW/Rel%
112032	JACLES BOY JAKS S2F	167/87
113046	MEANDER ROCKETMAN-ET S1F	164/87
110049	SAVANNAHS HF HAMMER S1F	168/99
113043	ADAMS BR ULTIMATE S3F	155/86
114015	BACKHOUSE EO GRAVITY S2F	153/85
112095	BONNYS HAMMER HEAD S1F	151/97
114123	RIVERHEIGHTS GB ROGUE S3F	156/83
113114	DUNROBIN HR JACKPOT S3F	173/98
112054	BAGWORTH SH KEEPSAKE S2F	180/91
113070	BAGWORTH PF GRANDEUR S1F	174/98
110006	GREENWELL FI BLADE S3F	157/99
112063	PADRUTTS GB TOPNOTCH S2F	160/88

Management		-0.5	0	0.5	1	
Adapts to Milking	**0.29**					quickly
Shed Temperament	**0.27**					placid
Milking Speed	**0.16**					fast
Overall Opinion	**0.41**					desirable

Conformation		-0.5	0	0.5	1	
Stature	**0.62**					tall
Capacity	**0.41**					capacious
Rump Angle	**-0.11**					sloping
Rump Width	**0.30**					wide
Legs	**0.04**					curved
Udder Support	**0.44**					strong
Front Udder	**0.27**					strong
Rear Udder	**0.30**					high
FrontTeat Placement	**0.11**					close
Rear Teat Placement	**0.41**					close
Udder Overall	**0.40**					desirable
Dairy Conformation	**0.44**					desirable

BW/Rel%	**191/99**
2019 BW/Rel%	**157/99**
Milkfat BV	**32 kg**
Protein BV	**28 kg**
Milk BV	**666 l**
Liveweight BV	**37 kg**
Longevity BV	**418**
Milkfat BV %	**4.8%**
Protein BV %	**3.8%**
Calving Dif BV	**1.3**
Fertility BV	**2.6**
SCC BV	**-0.14**
BCS BV	**0.12**

NB: the reliability of a team of bulls is always higher than using just one bull
Evaluation Date 15/10/2018 AE

2018 Holstein Friesian **Forward Pack** Team

Sire		BW/gBW/Rel%
111037	SAN RAY FM BEAMER-ET S2F	242/96
113009	HAZAEL SH DISTINCT-ET S1F	232/88
114007	BUSY BROOK WTP VECTOR S3F	240/83
111036	ARKAN FM BUSTER-ET S2F	205/93
112034	CARSONS FM CAIRO S3F	209/98
114032	WOODCOTE FI MASTERMIND	196/83
111067	BYREBURN PF ETERNAL S2F	186/98
113120	BOTHWELL WT MAXIMA S2F	170/98
115080	WESTEDGE VHR SWEET AS S2F	232/68
115054	MEANDER SB WINGMAN-ET S2F	215/66

Sire		BW/gBW/Rel%
116065	DICKSONS BG MANDATE S1F	204/68
117051	BUSY BROOK SB FORTUNE S2F	206/61
116037	ARKAN ML BABYLON-ET S1F	212/66
117066	MEANDER TT ASSET-ET S2F	199/58
117021	TAFTS TT OFFICIAL-ET S2F	188/59
116036	ARKAN MGH BACKDROP-ET S2F	197/68
116001	FOOTEHILLS BG LINCOLN S1F	167/62
117093	PRATTLEY GI VIGILANTE S2F	179/62
117088	SPRING RIVER OL SCOUT S2F	175/60
117091	TRONNOCO INCA SOVRAN S2F	168/62

WEIGHTED AVERAGES OF PREMIER SIRES - $209/98%

Management		-0.5	0	0.5	1	
Adapts to Milking	**0.26**					quickly
Shed Temperament	**0.25**					placid
Milking Speed	**0.12**					fast
Overall Opinion	**0.38**					desirable

Conformation		-0.5	0	0.5	1	
Stature	**0.67**					tall
Capacity	**0.32**					capacious
Rump Angle	**-0.05**					sloping
Rump Width	**0.38**					wide
Legs	**0.02**					curved
Udder Support	**0.50**					strong
Front Udder	**0.28**					strong
Rear Udder	**0.37**					high
FrontTeat Placement	**0.08**					close
Rear Teat Placement	**0.33**					close
Udder Overall	**0.43**					desirable
Dairy Conformation	**0.40**					desirable

BW/gBW/Rel%	**209/98**
2019 BW/gBW/Rel%	**172/98**
Milkfat BV/gBV	**35 kg**
Protein BV/gBV	**30 kg**
Milk BV/gBV	**708 l**
Liveweight BV/gBV	**40 kg**
Longevity BV/gBV	**437**
Milkfat BV/gBV %	**4.8%**
Protein BV/gBV %	**3.9%**
Calving Dif BV/gBV	**1.3**
Fertility BV/gBV	**3.0**
SCC BV/gBV	**-0.16**
BCS BV/gBV	**0.12**

Red shaded bulls are Spring Bulls with AEU BW & BV's
Grey shaded bulls are daughter proven with AEU BW & BV's
Evaluation Date 15/10/2018 AE
Non shaded bulls are genomically selected with LIC gBW & gBV's data - 6/10/2018

2018 Holstein Friesian **A2A2** Team

Sire		gBW/Rel%
117081	CAVALIER SB CASINO-ET S2F	198/63
117082	MULLINS SB REVOLUTION S2F	207/62
116013	STOUPES BG TRIUMPHANT S1F	188/62
116019	WERDERS DE OVERTIME S1F	182/59
116035	ARKAN MGH BESTSELLER S2F	191/65
117035	BELLAMYS MH GAMBIT-ET S2F	176/63
117063	HAZAEL SB MOSES-ET S2F	189/63
116062	CHARLTONS HF FAME-ET S2F	161/63
116080	KEASTS GI SURETHING S2F	176/62
117044	TELESIS GI ESQUIRE S2F	167/63

Sire		gBW/Rel%
117065	MEANDER MH ANTIC-ET S2F	177/64
116039	ARKAN HF FREELANCE S2F	171/62
116025	OAKLINE SD TROOPER S1F	149/63
117009	PAYNES MH AUSTIN-ET S2F	173/62

WEIGHTED AVERAGES OF PREMIER SIRES - $180/98%

Management		-0.5	0	0.5	1	
Adapts to Milking	**0.18**					quickly
Shed Temperament	**0.17**					placid
Milking Speed	**0.04**					fast
Overall Opinion	**0.31**					desirable

Conformation		-0.5	0	0.5	1	
Stature	**0.66**					tall
Capacity	**0.24**					capacious
Rump Angle	**-0.11**					sloping
Rump Width	**0.33**					wide
Legs	**-0.02**					curved
Udder Support	**0.42**					strong
Front Udder	**0.27**					strong
Rear Udder	**0.32**					high
FrontTeat Placement	**0.11**					close
Rear Teat Placement	**0.26**					close
Udder Overall	**0.40**					desirable
Dairy Conformation	**0.32**					desirable

gBW/Rel%	**180/98**
2019 gBW/Rel%	**137/98**
Milkfat BV/gBV	**30 kg**
Protein BV/gBV	**32 kg**
Milk BV/gBV	**805 l**
Liveweight BV/gBV	**39 kg**
Longevity BV/gBV	**391**
Milkfat BV/gBV %	**4.6 %**
Protein BV/gBV %	**3.8 %**
Calving Dif BV/gBV	**1.8**
Fertility BV/gBV	**1.8**
SCC BV/gBV	**0.03**
BCS BV/gBV	**0.06**

LIC gBW & gBV's data
Source Date: 15/10/2018

Q.

How can you improve the traits important to you at a faster rate?

A.

Premier Sires

LIC® Jersey

2018 Jersey **Daughter Proven** Team

Sire		BW/Rel%	Sire		BW/Rel%
314052	CRESCENT EXCELL MISTY ET	260/83	312057	BELLS CM CONRAD S2J	196/87
314022	LINAN INTEGRITY WINSTON	242/89	314020	ARRIETA DEGREE JANGLE ET	176/82
311013	OKURA LT INTEGRITY	221/99			
313023	CRESCENT EXCELL MONOPOLY	214/84			
312034	OKURA GOLDIE INDEX	222/89			
313046	OKURA OLM KAINO ET	221/98			
314012	KAITAKA OI LEOPARD ET	212/88			
314013	TIRONUI AND STELLAR	210/81			
313016	BONACORD MURMUR BOLT	195/99			
314004	BELLS OI FLOYD S3J	208/93			

WEIGHTED AVERAGES OF PREMIER SIRES - $217/99%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.20				quickly
Shed Temperament	0.26				placid
Milking Speed	0.11				fast
Overall Opinion	0.25				desirable
Conformation	**-0.5**	**0**	**0.5**	**1**	
Stature	-0.95				tall
Capacity	0.40				capacious
Rump Angle	-0.03				sloping
Rump Width	-0.06				wide
Legs	0.10				curved
Udder Support	0.30				strong
Front Udder	0.41				strong
Rear Udder	0.56				high
FrontTeat Placement	0.03				close
Rear Teat Placement	0.02				close
Udder Overall	0.48				desirable
Dairy Conformation	0.34				desirable

BW/Rel%	217/99
2019 BW/Rel%	226/99
Milkfat BV	24 kg
Protein BV	3 kg
Milk BV	-423 l
Liveweight BV	-49 kg
Longevity BV	324
Milkfat BV %	5.8%
Protein BV %	4.3%
Calving Dif BV	-2.3
Fertility BV	1.3
SCC BV	-0.19
BCS BV	0.13

NB: the reliability of a team of bulls is always higher than using just one bull
Evaluation Date 15/10/2018 AE

2018 Jersey **Forward Pack** Team

Sire		BW/gBW/Rel%	Sire		BW/gBW/Rel%
314052	CRESCENT EXCELL MISTY ET	260/83	316035	FOXTON LT FIXATION S2J	217/66
314022	LINAN INTEGRITY WINSTON	242/89	316038	DEEP RIVER PCG FAVOUR	212/65
311013	OKURA LT INTEGRITY	221/99	317048	GLANTON SS BALTIC ET S3J	208/65
313023	CRESCENT EXCELL MONOPOLY	214/84	317049	SHELBY SS LORENZO S3J	207/66
313046	OKURA OLM KAINO ET	221/98	317034	HEUVEN SUPER WISEGUY	207/64
312034	OKURA GOLDIE INDEX	222/89	316036	FOXTON PG COYOTE ET S2J	193/66
315058	BONACORD AND BARKER S2J	238/67	317039	COOMBES TRIG JUNCTION ET	191/60
315045	GLENUI DEGREE HOSS ET	204/67			
317023	SHEPHERDS LT FLINT ET S3J	240/66			
317037	GLENVUE OI MIGHTY	216/66			

WEIGHTED AVERAGES OF PREMIER SIRES - $225/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.25				quickly
Shed Temperament	0.29				placid
Milking Speed	0.16				fast
Overall Opinion	0.32				desirable
Conformation	**-0.5**	**0**	**0.5**	**1**	
Stature	-1.01				tall
Capacity	0.45				capacious
Rump Angle	-0.07				sloping
Rump Width	-0.09				wide
Legs	0.12				curved
Udder Support	0.32				strong
Front Udder	0.41				strong
Rear Udder	0.58				high
FrontTeat Placement	0.02				close
Rear Teat Placement	0.01				close
Udder Overall	0.50				desirable
Dairy Conformation	0.40				desirable

BW/gBW/Rel%	225/98
2019 BW/gBW/Rel%	233/98
Milkfat BV/gBV	25 kg
Protein BV/gBV	4 kg
Milk BV/gBV	-405 l
Liveweight BV/gBV	-52 kg
Longevity BV/gBV	307
Milkfat BV/gBV %	5.8%
Protein BV/gBV %	4.4%
Calving Dif BV/gBV	-2.0
Fertility BV/gBV	1.3
SCC BV/gBV	-0.14
BCS BV/gBV	0.16

Green shaded bulls are Spring Bulls with AEU BW & BV's
Grey shaded bulls are daughter proven with AEU BW & BV's
Evaluation Date 15/10/2018 AE
Non shaded bulls are genomically selected with LIC gBW & gBV's data - 6/10/2018

Q.

How can you improve the traits important to you at a faster rate?

A.

Premier Sires

LIC® | KiwiCross™

2018 KiwiCross™ **Daughter Proven** Team (F9J7)

Sire		BW/Rel%
511011	PRIESTS SIERRA	243/98
512005	JUST ONCE COOPER	198/85
514018	GLEN KORU EPIC	218/81
513054	BURGESS TRICKSHOT ET	210/82
513050	WOODHEYS SPEED DIAL	191/98
513074	SCHRADERS TUSK	199/86
511026	ARKANS BEAUT ET	206/99
512050	ARKANS PERSPECTIVE-ET	184/95
513016	HORIZON BLAZER ET	187/88
514015	GLEN KORU ETHOS-ET S1F	197/92

Sire		BW/Rel%
511051	DRYSDALES SOVEREIGN	175/94
513007	ARKANS BEST BET	179/87

WEIGHTED AVERAGES OF PREMIER SIRES - $203/99%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.28				quickly
Shed Temperament	0.27				placid
Milking Speed	0.14				fast
Overall Opinion	0.33				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.06				tall
Capacity	0.27				capacious
Rump Angle	-0.14				sloping
Rump Width	0.03				wide
Legs	0.10				curved
Udder Support	0.40				strong
Front Udder	0.26				strong
Rear Udder	0.48				high
FrontTeat Placement	0.00				close
Rear Teat Placement	0.35				close
Udder Overall	0.39				desirable
Dairy Conformation	0.29				desirable

BW/Rel%	203/99
2019 BW/Rel%	182/99
Milkfat BV	26 kg
Protein BV	19 kg
Milk BV	262 l
Liveweight BV	-4 kg
Longevity BV	381
Milkfat BV %	5.0%
Protein BV %	4.0%
Calving Dif BV	-0.4
Fertility BV	2.6
SCC BV	-0.16
BCS BV	0.05

NB: the reliability of a team of bulls is always higher than using just one bull
Evaluation Date 15/10/2018 AE

2018 KiwiCross™ **Forward Pack** Team (F8J8)

Sire		BW/gBW/Rel%
514017	GLEN KORU BECKON	271/85
511011	PRIESTS SIERRA	243/98
512048	ATHLIAM PACEMAKER	214/98
513098	ARKANS BOUNTY	223/97
512005	JUST ONCE COOPER	198/85
513066	MOURIES LUIGI	215/84
515019	LYNBROOK KNIGHT ET	245/58
515058	KAHURANGI IZABULL	229/68
517067	CAWDOR PINNACLE	246/63
517021	HORIZON BANZAI	239/62

Sire		BW/gBW/Rel%
517043	GLEN KORU PROCLAIMER-ET	242/63
516024	ARRIETA BRANSON-ET	228/69
517001	ARKANS PATRIARCH-ET	223/60
517023	HORIZON BOULEVARD-ET	237/61
517075	SPRING RIVER KUDOS-ET	209/63
517054	MOURIES ANGELO	225/64
516074	CROSSANS CRITICAL-ET	208/60
517074	SPRING RIVER KEVIN-ET	205/59

WEIGHTED AVERAGES OF PREMIER SIRES - $232/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.25				quickly
Shed Temperament	0.27				placid
Milking Speed	0.15				fast
Overall Opinion	0.33				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.21				tall
Capacity	0.41				capacious
Rump Angle	-0.13				sloping
Rump Width	0.14				wide
Legs	0.05				curved
Udder Support	0.40				strong
Front Udder	0.40				strong
Rear Udder	0.47				high
FrontTeat Placement	-0.02				close
Rear Teat Placement	0.21				close
Udder Overall	0.44				desirable
Dairy Conformation	0.37				desirable

BW/gBW/Rel%	232/98
2019 BW/gBW/Rel%	210/98
Milkfat BV/gBV	31 kg
Protein BV/gBV	22 kg
Milk BV/gBV	323 l
Liveweight BV/gBV	-9 kg
Longevity BV/gBV	401
Milkfat BV/gBV %	5.1%
Protein BV/gBV %	4.0%
Calving Dif BV/gBV	-0.8
Fertility BV/gBV	2.5
SCC BV/gBV	-0.17
BCS BV/gBV	0.07

Blue shaded bulls are Spring Bulls with AEU BW & BV's
Grey shaded bulls are daughter proven with AEU BW & BV's
Evaluation Date 15/10/2018 AE
Non shaded bulls are genomically selected with LIC gBW & gBV's data - 6/10/2018

2018 KiwiCross™ **A2A2** Team (F10J6)

Sire		BW/gBW/Rel%
517042	LUCK-AT-LAST INSPIRED-ET	247/63
517049	CAVALIER CALLAWAY	231/63
517026	HOWSES SPRINGFIELD	219/61
516055	BRAEMARK BATTLE AXE	228/64
517047	MARSHALLS SILVER LINING	228/62
517061	BAILEYS ROYALTY	227/62
513076	KAMAHI KING	200/98
517050	BURMEISTERS HARDCORE	211/66
515039	HOLMES TRYLINE	185/64
514056	TIROHANGA TAKE NOTE	192/81

Sire		BW/gBW/Rel%
515011	LYNSKEYS LIAM	203/64
516043	ARKANS BOOMBOX-ET	207/60
516032	ARKANS BELLMAN-ET	188/59
517053	BURMEISTERS BREWSTER	196/64

WEIGHTED AVERAGES OF PREMIER SIRES - $212/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.28				quickly
Shed Temperament	0.27				placid
Milking Speed	0.15				fast
Overall Opinion	0.33				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.17				tall
Capacity	0.47				capacious
Rump Angle	-0.01				sloping
Rump Width	0.10				wide
Legs	0.05				curved
Udder Support	0.42				strong
Front Udder	0.38				strong
Rear Udder	0.45				high
FrontTeat Placement	0.03				close
Rear Teat Placement	0.24				close
Udder Overall	0.45				desirable
Dairy Conformation	0.43				desirable

BW/gBW/Rel%	212/98
2019 BW/gBW/Rel%	193/98
Milkfat BV	27 kg
Protein BV	19 kg
Milk BV	254 l
Liveweight BV	-5 kg
Longevity BV	377
Milkfat BV %	5.1 %
Protein BV %	4.0 %
Calving Dif BV	-0.9
Fertility BV	1.9
SCC BV	-0.18
BCS BV	0.11

Shaded bulls are daughter proven with AEU BW & BV's
Evaluation Date 15/10/2018 AE
Non shaded bulls are genomically selected with LIC gBW & gBV's data - 6/10/2018

115080 Westedge VHR Sweet As S2F

Breeding Details

Breeder	P & J Langdon	**Dam**	Rosie 3
Sire	Van Heuvens VA Remedy S1F	**MGS**	Fairmont Mint-Edition

Production BVs

Protein	Milkfat	Milk	Liveweight	Fertility
38 kg	48 kg	785 l	45 kg	1.9 %
3.9 %	4.9 %			

Total Longevity	Somatic Cell Count	Calving Difficulty	Body Condition
332 days	0.13	3.7%	0.00

INDIVIDUAL PRICE $30.95 +GST | SPRING PAK FROM $22.59* +GST

*If 10% InvestaMate discount applies

BW/Rel Current $232/68% BW/Rel 2019 $192/68%

TOP Traits — 93 Daughters 33 Herds

Management	BV	-0.5 0 0.5 1.0
Adapts to Milking	0.68	
Shed Temperament	0.67	
Milking Speed	0.24	
Overall Opinion	0.73	
Stature	0.64	
Capacity	0.20	
Rump Angle	-0.44	
Rump Width	0.54	
Legs	0.00	
Udder Support	0.53	
Front Udder	0.33	
Rear Udder	0.30	
Front Teat Placement	-0.16	
Rear Teat Placement	0.12	
Udder Overall	0.34	
Dairy Conformation	0.40	

A2 Protein	A2A2	TOP Daughters	47
Gestation Length	-7.1 Days	OAD	1273

Holstein-Friesian F16
Registered Pedigree (Supplementary)

Evaluation Date 15/10/2018 AE

115054 Meander SB Wingman-ET S2F

Daughter of 113014 Spring Tralee BOSS-ET S3F (WINGMAN's sire)

Breeding Details

Breeder	Meander Holsteins	**Dam**	Meander FMI April S2F
Sire	Spring Tralee Boss-ET S3F	**MGS**	Farside M Illustrious S3F

Production BVs

Protein	Milkfat	Milk	Liveweight	Fertility
32 kg	29 kg	810 l	19 kg	1.2 %
3.8 %	4.6 %			

Total Longevity	Somatic Cell Count	Calving Difficulty	Body Condition
395 days	-0.64	1.3 %	0.04

INDIVIDUAL PRICE $30.95 +GST | SPRING PAK FROM $22.59* +GST

*If 10% InvestaMate discount applies

BW/Rel Current $215/66% BW/Rel 2019 $173/66%

TOP Traits — 81 Daughters 33 Herds

Management	BV	-0.5 0 0.5 1.0
Adapts to Milking	0.05	
Shed Temperament	0.07	
Milking Speed	-0.29	
Overall Opinion	0.02	
Stature	0.44	
Capacity	0.00	
Rump Angle	-0.61	
Rump Width	0.14	
Legs	-0.22	
Udder Support	1.16	
Front Udder	0.59	
Rear Udder	0.97	
Front Teat Placement	0.66	
Rear Teat Placement	1.34	
Udder Overall	1.03	
Dairy Conformation	0.17	

A2 Protein	A1A2	TOP Daughters	41
Gestation Length	-4.4 Days	OAD	1303

Holstein-Friesian F16
Registered Pedigree (Supplementary)

Evaluation Date 15/10/2018 AE

315058 Bonacord AND Barker S2J

Maternal Grandam of 315058 Bonacord AND Barker

Breeding Details

Breeder	Allison Family	**Dam**	Bonacord Murmurs Bobbi-Jo
Sire	Arrieta NN Degree ET	**MGS**	Okura Lika Murmur S3J

Production BVs

Protein	Milkfat	Milk	Liveweight	Fertility
11 kg	30 kg	-175 l	-54 kg	1.5 %
4.2 %	5.6 %			

Total Longevity	Somatic Cell Count	Calving Difficulty	Body Condition
282 days	0.21	0.0 %	0.10

INDIVIDUAL PRICE $30.95 +GST | SPRING PAK FROM $22.59* +GST

*If 10% InvestaMate discount applies

BW/Rel Current $238/67% BW/Rel 2019 $237/67%

TOP Traits — 94 Daughters 38 Herds

Management	BV	-0.5 0 0.5 1.0
Adapts to Milking	0.28	
Shed Temperament	0.29	
Milking Speed	0.24	
Overall Opinion	0.24	
Stature	-1.02	
Capacity	0.44	
Rump Angle	-0.53	
Rump Width	0.17	
Legs	0.11	
Udder Support	-0.02	
Front Udder	0.23	
Rear Udder	0.29	
Front Teat Placement	0.16	
Rear Teat Placement	0.08	
Udder Overall	0.23	
Dairy Conformation	0.46	

A2 Protein	A2A2	TOP Daughters	48
Gestation Length	-0.7 Days	OAD	1272

Jersey J16
Registered Pedigree (Supplementary)

Evaluation Date 15/10/2018 AE

315045 Glenui Degree Hoss ET

Dam of 315045-Glenui Degree Hoss ET

Breeding Details

Breeder	P & L Landers	**Dam**	Glenui Bowies Honeydew
Sire	Arrieta NN Degree ET	**MGS**	Konui Glen Elmos Bowie

Production BVs

Protein	Milkfat	Milk	Liveweight	Fertility
2 kg	21 kg	-531 l	-47 kg	2.7 %
4.3 %	5.9 %			

Total Longevity	Somatic Cell Count	Calving Difficulty	Body Condition
214 days	-0.13	-2.2 %	0.18

INDIVIDUAL PRICE $30.95 +GST | SPRING PAK FROM $22.59* +GST

*If 10% InvestaMate discount applies

BW/Rel Current $204/67% BW/Rel 2019 $215/67%

TOP Traits — 84 Daughters 37 Herds

Management	BV	-0.5 0 0.5 1.0
Adapts to Milking	-0.03	
Shed Temperament	0.01	
Milking Speed	0.19	
Overall Opinion	0.11	
Stature	-0.85	
Capacity	0.32	
Rump Angle	0.20	
Rump Width	0.17	
Legs	0.15	
Udder Support	0.43	
Front Udder	0.49	
Rear Udder	0.47	
Front Teat Placement	0.23	
Rear Teat Placement	0.18	
Udder Overall	0.51	
Dairy Conformation	0.32	

A2 Protein	A2A2	TOP Daughters	44
Gestation Length	1.7 Days	OAD	1266

Jersey J16
Registered Pedigree

Evaluation Date 15/10/2018 AE

515019 Lynbrook Knight ET

Breeding Details

Breeder	S & N Ireland	**Dam**	Lynbrook Lika Karen
Sire	Castlegrace Daredevil	**MGS**	Okura Lika Murmur S3J

Production BVs

Protein	Milkfat	Milk	Liveweight	Fertility
22 kg	28 kg	398 l	-20 kg	2.4 %
3.9 %	4.9 %			

Total Longevity	Somatic Cell Count	Calving Difficulty	Body Condition
410 days	-0.29	-1.5 %	0.21

INDIVIDUAL PRICE $30.95 +GST | SPRING PAK FROM $22.59* +GST

*If 10% InvestaMate discount applies

BW/Rel Current $245/58% **BW/Rel 2019 $221/58%**

TOP Traits — 56 Daughters 35 Herds

Management	BV	-0.5 0 0.5 1.0
Adapts to Milking	0.20	
Shed Temperament	0.20	
Milking Speed	0.12	
Overall Opinion	0.23	
Stature	-0.75	
Capacity	1.28	
Rump Angle	-0.06	
Rump Width	0.03	
Legs	0.17	
Udder Support	0.24	
Front Udder	0.38	
Rear Udder	0.48	
Front Teat Placement	-0.19	
Rear Teat Placement	-0.08	
Udder Overall	0.31	
Dairy Conformation	0.90	

A2 Protein	A2A2	TOP Daughters	25
Gestation Length	-0.5 Days	OAD	1271

KiwiCross™ F7J8A1

Evaluation Date 15/10/2018 AE

515058 Kahurangi Izabull

Daughter of 511053 Howies Arkan Ramada ET

Breeding Details

Breeder	P & D Langford	**Dam**	Izaria
Sire	Howies Arkan Ramada T	**MGS**	Okura Lika Murmur S3J

Production BVs

Protein	Milkfat	Milk	Liveweight	Fertility
23 kg	30 kg	453 l	-23 kg	2.0 %
3.9 %	4.9 %			

Total Longevity	Somatic Cell Count	Calving Difficulty	Body Condition
351 days	-0.30	-0.4 %	-0.11

INDIVIDUAL PRICE $30.95 +GST | SPRING PAK FROM $22.59* +GST

*If 10% InvestaMate discount applies

BW/Rel Current $229/68% **BW/Rel 2019 $205/68%**

TOP Traits — 96 Daughters 34 Herds

Management	BV	-0.5 0 0.5 1.0
Adapts to Milking	0.31	
Shed Temperament	0.36	
Milking Speed	0.26	
Overall Opinion	0.31	
Stature	-0.44	
Capacity	-0.07	
Rump Angle	-0.08	
Rump Width	0.06	
Legs	0.00	
Udder Support	0.39	
Front Udder	0.42	
Rear Udder	0.83	
Front Teat Placement	-0.23	
Rear Teat Placement	0.03	
Udder Overall	0.54	
Dairy Conformation	-0.15	

A2 Protein	A1A1	TOP Daughters	66
Gestation Length	-7.4 Days	OAD	1252

KiwiCross™ F9J7

Evaluation Date 15/10/2018 AE

2018 Alpha Nominated Yearling Bulls

LIC's yearling bulls have been selected.

These bulls began their first semen collections between July and August 2018, allowing them a good amount of time to reach sexual maturity.

Final selection of the most promising bulls is delayed as long as possible – this is done to provide reassurance the bulls can consistently produce enough quality semen to fulfil orders.

The 18-code bulls below have been hand-picked by LIC's sire analysts.

Selections are based on a combination of factors, the most important of which include:

- bulls with a high genomic rating;
- bulls from strong cow families, and;
- diversity.

The upshot of above are high genomic breeding worth bulls.

A feature this year is that many of the highest yearling bulls were themselves sired by genomic bulls, who had previously also been marketed as yearling bulls.

This allows for the best genetics tomorrow to be purchased today, cutting down the generation interval and providing the potential for faster, greater, strides in genetic gain.

These bulls can be purchased individually or selected in-part with other genomically-selected bulls via a Genomic Pak.

LIC Yearling/18-Code Bulls

Code	Name	BW	2019 BW	REL	Fat	Prot	Vol	LWT	Fert	UdderO	DairyC	A2	Sire
118042	DICKSONS MH MASON-ET S2F	222	174	62	32	33	887	20	3.6	0.48	0.21	A2A2	MOURNE GROVE HOTHOUSE S2F
118023	TRONNOCO INCA SHAKIR S3F	203	170	62	38	30	589	56	4.0	0.32	0.41	A2A2	GYDELAND EXCEL INCA S3F
118070	TAFTS GR SUPERVISOR S1F	209	168	55	42	34	892	47	1.8	0.46	0.35	A2A2	GALATEA MGH REGIMENT S1F
118050	DICKSONS HF MOTIVE-ET S2F	211	165	61	41	38	1038	20	-1.7	0.23	0.25	A2A2	HAZAEL DAUNTLESS FREEDOM
118037	CHARLTONS DM AGENT-ET S1F	189	162	51	35	25	471	34	0.8	0.31	0.29	A2A2	DICKSONS BG MANDATE S1F
118051	GREENWELL DM ALCATRAZ S1F	190	160	53	26	28	533	21	1.9	0.30	0.48	A1A2	DICKSONS BG MANDATE S1F
118053	GREENWELL GR GOVERNOR S1F	197	156	55	35	32	706	46	2.2	0.57	0.29	A2A2	GALATEA MGH REGIMENT S1F
118071	GLENMEAD SB TRAPEZE S1F	187	155	55	31	28	596	21	0.0	0.29	0.28	A2A2	SPRING TRALEE BASS-ET S2F
Code	**Name**	**BW**	**2019 BW**	**REL**	**Fat**	**Prot**	**Vol**	**LWT**	**Fert**	**UdderO**	**DairyC**	**A2**	**Sire**
318032	SHELBY INTEG LABYRINTH ET	246	258	66	30	4	-466	-54	1.2	0.39	0.40	A1A2	OKURA LT INTEGRITY
318009	TIRONUI SUPERMAN ET	227	243	65	32	3	-527	-40	1.7	0.48	0.41	A2A2	PUKETAWA AD SUPERSTITION
318021	GLANTON DESI BANFF	235	243	63	25	2	-748	-46	2.6	0.41	0.45	A2A2	ARRIETA TERRIFIC DESI ET
318015	GLENUI SUPER LAMAR	218	230	65	27	2	-443	-47	1.5	0.49	0.50	A2A2	PUKETAWA AD SUPERSTITION
318029	GLENUI BC LAREDO ET S3J	228	228	62	26	7	-223	-35	3.3	0.42	0.32	A2A2	BELLS CM CONRAD S2J
318012	LYNBROOK KING QUADRANT	215	226	65	27	4	-348	-49	1.0	0.68	0.55	A2A2	ROMA MURMUR KINGPIN S3J
318035	SHELBY BC LOTTO ET S3J	222	225	62	22	5	-448	-41	3.3	0.26	0.16	A2A2	BELLS CM CONRAD S2J
318002	OKURA COYOTE LENNOX S3J	217	219	58	28	8	-99	-44	1.0	0.42	0.47	A2A2	FOXTON PG COYOTE ET S2J
Code	**Name**	**BW**	**2019 BW**	**REL**	**Fat**	**Prot**	**Vol**	**LWT**	**Fert**	**UdderO**	**DairyC**	**A2**	**Split**	**Sire**
518016	HORIZON ASCOTT	236	219	60	30	19	169	-16	3.0	0.35	0.23	A2A2	F9J7	BURMEISTERS BANDANA
518037	SHEPHERDS EGMONT-ET	235	219	55	28	16	106	-13	4.0	0.68	0.44	A1A2	F9J7	SPRINGTRALEEBEAUDEN-ET
518064	VAN STRAALENS EMPOWER	240	216	53	30	23	250	-23	0.7	0.34	0.22	A1A2	F9J7	WAIARIARKANSBAZOOKA-ET
518050	SPRING RIVER KAHUNA-ET	226	215	63	33	16	109	-24	1.7	0.43	0.22	A1A2	F8J8	ARKANS BOUNTY
518038	WERDERS PREMONITION	223	214	62	36	15	55	13	3.6	0.33	0.46	A2A2	F8J8	PRIESTS SIERRA
518017	HORIZON BARNSTORMER-ET	231	212	62	34	21	237	11	3.5	0.31	0.43	A2A2	F8J8	PRIESTS SIERRA
518056	JACKSONS BOCELLI	226	212	55	29	19	33	-19	2.2	0.29	0.16	A2A2	F7J9	ARRIETA BRANSON-ET
518026	WADES WELLEN	238	211	53	37	26	474	14	3.5	0.23	0.35	A1A2	F11J5	WAIARIARKANSBAZOOKA-ET
518076	GREENWELL BLACKHAWK	222	200	54	31	21	271	7	3.1	0.56	0.37	A2A2	F11J5	DICKSONS BG MANDATE S1F
518031	BROWNS GRAND-DESIGNER-ET	223	199	60	29	23	358	-2	2.2	0.30	0.21	A2A2	F12J4	KRAAKMANS JAYDIE

INDIVIDUAL PRICE $30.95 +GST | GENOMIC PAK $27.70 +GST

*LIC Data Source 06/10/2018

*Volume and InvestaMate discounts may apply

SGL adds $millions to dairy revenue

by Greg Hamill, LIC genetics business manager

Drawing the short-straw has never been so rewarding

Greg Hamill

The upward trend of farmers turning to LIC's short gestation straws continues in 2018, as more farmers cash-in on the financial benefits of last year's breeding choices.

Extra farm revenue generated from cows calving earlier through the use of short gestation semen is this year estimated to exceed $12.5 million; this is based solely on additional days-in-milk.

The immediate revenue gains paint only a partial picture, however.

Of equal importance, it could be argued, is the fact that earlier-calvers get a longer recovery period between giving birth and the farm's mating start date; research suggests these girls are more likely to cycle and get back in-calf in the first six weeks of mating (farmers using MINDA LIVE's reproduction reports will be aware that it's the later-calving cows that are the hardest group to get back in-calf).

Therefore, short gestation semen is another tool in the arsenal to help farmers improve reproductive performance. Every additional cow in-calf is one fewer that needs replacing, and each extra calf represents more opportunity for discretionary culling.

LIC has seen more than 230 additional farmers moving to an all-AB mating plan this year (and this number is growing by about 20 per week), with many motivated by a desire to reduce their on-farm biosecurity risk.

Most of these farmers will be utilising fresh short gestation semen, mating for 11 weeks and calving in 9-10 weeks.

Continued use of short gestation semen this year is likely to have a financial contribution next year in excess of $15 million in dairy revenue, all of which is down to additional days-in-milk.

Contact your local Farm Solutions Manager if you haven't already got your short gestation semen plan in, or if you'd like to discuss the pros and cons of a no (natural-mate) bull mating period.

Cut the bull, set the stage, roll the camera

Within four weeks of mating start date, Andrew Hoogeveen's aim is to have 95% of his spring-calved cows submitted for artificial insemination.

Over the first 28-day period, he's using a mix of nominated bulls and Wagyu (the Wagyu is used over the bottom 20% of cows, based on breeding worth and key traits such as udders).

Andrew will then switch to short gestation dairy semen for three weeks, all of which will result in a six-week calving period to kick-off 2019-2020.

That'll be spring mating done for another season, with no sign, or desire, for a natural-mate bull.

No-bull a no-brainer?

The no-bull plan has worked for Andrew and his wife Beverley since they invested in the Protrack Heat camera, installed four years ago in their 45-bail rotary.

"Before that we used natural-mate bulls, Andrew says. "I wanted to move away from bulls mainly for health and safety reasons – I found some were overly-aggressive, damaging parts of the farm, fences and other infrastructure.

"They were a hassle for staff and the farm in general. Another thing is that most beef bulls are not going to help with calving patterns because they're not short gestation – so you end up having an even longer calving."

While the biosecurity factor didn't feature in his decision several years ago, Andrew acknowledges it's certainly the catalyst behind the current wave of new farmer interest in going all-AB.

"An all-AI mating approach takes out the disease threat spread by bulls coming in from outside the farm. It probably removes a big-risk area, not only for M.bovis but for any future outbreaks."

Accurate systems & freeing-up time

Andrew emphasises his decision to go no-bull was not taken lightly.

His advice to those contemplating all-AB is that they are well-prepared and organised ahead of time, especially in terms of heat detection – and particularly if there's not technology like Protrack Heat to assist the human eye.

"If you eliminate the bull, you've got to have a really good system for picking heats – it's the number one thing behind allowing the cows a proper recovery post-calving.

"I knew by going away from natural-mate bulls we might compromise repro results if we didn't get things set-up properly from the outset."

A self-confessed perfectionist, Andrew previously had his three staff pick, write-down, and draft animals for AB, but he would ensure he was at the shed every morning to make the final call during mating season.

"That's one of main reasons for getting Protrack™ Heat – I wanted to get to a situation where I could free myself up from being there every morning. You'll always need someone involved, but you can cut down on the room for human error with the camera – it picks up on cows that even I was missing."

Seeking cycles

Andrew prefers to also build a history of the cows' cycles prior to mating start date.

"Doing pre-mating heats gets us in a mind-set and gives us something to compare against."

In the spring of 2018, the split-calving farm of 480 cows had a six-week calving rate of 68%, putting it in the top-25% quartile nationally.

"We calve roughly 25% of the herd in autumn, and about 65% in spring, so we carry-over cows from one season to another. I try to have two six-week calving periods.

"During the season I'll generally look at empties and pick out the top-50% and keep milking those through the winter, and they'll be mated in May-June for autumn calving. If they're empty after that they'll get culled.

"So I'll give them two chances at mating; the ones that don't work out are generally the older ones or cows that are likely to have had a calving difficulty or retained membranes – something's not quite right reproductively."

Being a system 4-5 farm, the cows are fed on the feed pad every day of the year, and this is among the reasons for such a disciplined, tight, six-week calving period.

"Giving the cows plenty to eat, and plenty of time to recover, between calving and start-of-mating increases the chances of them cycling," Andrew says.

Q.

How do I get the best heat detection results?

A.

The best heat detection results are achieved by combining paddock observations with heat detection aids

- DairyNZ In-Calf book

As mating progresses heat detection fatigue can set in and heats get harder to pick. Just one missed heat can cost around $212* in lost production at today's milk price.

That's where LIC's range of heat detection products come in. LIC's heat detection aids provide a helping hand with heat detection and are easy to apply and interpret.

Check out our range below and contact 0800 2MINDA (0800 264 632) or your LIC rep to place an order.

Heat Detection Aids

LIC Bulls-i®
(Starting at $1.95)

- Self-adhesive
- Available in 5 colours: Red, green, yellow, pink and blue
- Sold in packs of 100

LIC Heat Patch
(Starting at: $2.50)

- Self-adhesive
- Available in two colours: Red and Blue
- Sold in packs of 100

LIC Heat Patch Plus
(Starting at: $2.70)

- Self-adhesive
- Available in two colours: Red and Blue
- Sold in packs of 100

KAMAR® Heatmount® Detectors
(Classic Starting at: $2.30
Peel n Glue starting from: $2.40)

- Available in classic and peel and glue options
- Available in two colours: Red and Blue

Prices exclude GST and are valid at time of print.

Drop of milk is due diligence

Whether it's bad news or a signal of resounding success, what's possible from a drop of milk is ultimately good for the continued viability of the farm.

Not to mention a good dose of peace-of-mind.

That's the story of Southland farming couple Rachel and Carl North, who are strong advocates for the convenience of regular herd tests and what their cows' milk is telling them.

"The cows are our major assets, and that's the way we've always viewed them since our sharemilking days," Rachel says. "Herd test information is really important to us, because we use it to monitor and manage the cows' health.

"Somatic cell counts aren't a problem for us, and we want to keep it that way. We don't have any need to do blanket treatment because when we get the report with all the high somatics on, we deal with the issue immediately by targeting the treatment with the vet."

While somatic cell counts haven't been a problem for the Norths, a more sinister problem has haunted them in the recent past.

"When we bought the herd we had a major Johnes problem, and we were losing anywhere between 30 and 50 cows a year.

"Then we found out about the Johnes test, using the herd test milk. It was quite scary for us, because at first we got a long list of high-positives, positives, and suspects.

"In the first year we culled all the high positives and positives, and we kept the suspects because of the inkling we might cull a healthy cow. Of the suspects we kept, they all came up positive over calving and we lost them all."

The Norths now immediately cull all their high-positives, positives, and suspects.

"It's heart-breaking, it's really hard to stick a cow on the cull truck when she's in supreme condition, doing 2.5kg milksolids, she's fed, she's pumping, but you know she's got Johnes: She's got no future, and she's going to do damage to the herd."

Rachel says there's good reason to hope the disease is no longer an issue.

"This year our Johnes test results came back with no cows affected.

"But we'll keep testing – for us it's invaluable. We'd rather any affected animal is found out and culled humanely rather than have her get to the clinical symptoms of this awful disease and die a horrible painful death."

The Norths are big fans of herd testing for another reason.

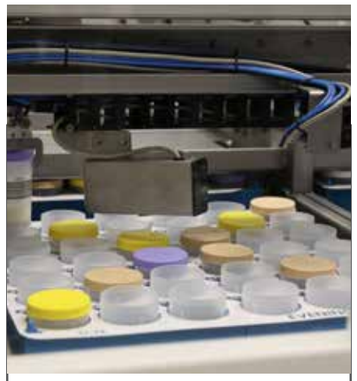
"The milk pregnancy test is so simple, non-invasive, and convenient. It's huge value for us because the cows aren't having to stand on the yard for up to half a day, being non-productive in the heat – and it's not normal for them to be doing that, so they can get distressed.

"Last year was our first year doing milk pregnancy testing, it was amazing because the results just came through the post or email – we never had to take the cows out of the paddock, it just happened.

"Any of the suspects we had – because of the way the dates fell – we just got the vet in for them."

Aging the pregnancies isn't an issue, Rachel says, because her husband Carl is disciplined with mating recordings, and dates are self-evident.

"All we need to know is if she's pregnant. We only use LIC semen – no natural mate bulls. We know if she hasn't held to what the AB Technician has done, and recorded, there's no other way she can get in-calf."



HERD TESTING AT THORNBURY, SOUTHLAND:

Rachel & Carl North, farm owners for four years.

- 32 aside herringbone
- 430 crossbred cows
- 511kg milksolids average per cow
- Low bulk milk somatic cell count
- Targeted dry cow therapy
- Milk test for Johnes disease and for pregnancy

All-AB mating:

Premier Sires (plus Alpha nominated) for first six weeks, followed by three weeks SGL.

Starting on the path toward low-methane emission animals

Richard Spelman, LIC chief scientist, and Lorna McNaughton, LIC research scientist, recently travelled to Canada and Europe.

Among the goals of their trip was to check out what's happening at the cutting edge of agricultural genetics research, particularly when it comes to methane-reducing solutions.

The trip and research was funded by the New Zealand Agricultural Greenhouse Gas Research Consortium.

Here, Lorna provides a brief insight in to what's going on overseas, and how the consortium's learnings might be applied to the New Zealand dairy scene.

Genetics is a long-term game, requiring constant thought about what the future might look like, including the potential to introduce additional traits to breeding programmes.

Part of LIC's Research and Development focus is to consider and predict future traits for genetic selection – traits that are likely to meet a sustainable market need (for a profitable return) in 10, 15, or 20 years' time.

For example, environmental responsibility and animal welfare are hot topics right now, and these areas seem unlikely to slip from the radar anytime soon.

Therefore, breeding is thought to be a key tool that could help farmers meet future obligations to reduce greenhouse gases.

But to select for low-emission animals (or any given trait), scientists need to first-establish two key facts:

- Can the trait (or a correlated trait) be measured?
- Is there a genetic component to the trait (i.e. heritability)?

If the answer is 'yes' to the above points, data can be gathered to work out the genetic relationship between the trait of interest and other important traits.

Ideal traits for genetic selection have both strong heritability, and can be measured easily on a high number of animals (through herd testing, for example).

Methane is neither a trait that has strong heritability, nor can it be easily measured across a large amount of animals.

Further complicating the issue is that cow diets are variable; for data accuracy, it would be useful if individual cow feed intake could also be measured, but this is simply impractical in grazing cattle.

A trait too hard to ignore

However, overseas research has identified genetic variation in methane production, indicating the opportunity to breed for this trait still exists.

Heritability estimates of 15% to 20% are reported, which is less than milk production (30%), but significantly more than fertility (<10%).

Relationships between methane production and other traits are now being established.

Denmark is leading the world in this area, with methane data gathered from more than 5000 cows to date. A breeding value for methane is now planned for development.

Meanwhile, in the sheep industry, New Zealand's AgResearch has been selecting sheep for high- and low-methane production; both lines are being studied to understand what makes their methane output different.

One interesting finding is that the rumen is 20% smaller in the low-methane line.

Other developments

The gold standard for methane measurement is a 'respiration chamber', in which a cow is placed in a large sealed box, with scientists measuring everything that goes in, together with everything that comes out.

Although this method is good for small-scale research, it's both expensive and impractical for wider use.

Another research method involves the Sulphur Hexafluoride (SF6) system, using SF6 as a 'tracer gas' (see picture on p30).

Here, a small sample of the cow's breath is collected for a duration of 24 hours, with the methane concentration measured in the sample.

This system can be used in grazing cows and has been used on large numbers of animals. The limitation is that it's technically demanding and labour intensive, and a separate feed intake measurement is still needed.

Alternatively, the 'Greenfeed' is an off-the-shelf system for measuring methane, and this can be used in conjunction with a feed intake measuring system in indoor facilities.

Irish scientists have recently started using this system to measure methane in beef bulls. DairyNZ and Lincoln are both also utilising Greenfeed systems.

Another option is a 'sniffer' system to measure methane, which sits within a milking robot and is used in Denmark. This system could possibly be modified to sit in a rotary milking shed in New Zealand, but the problem of measuring feed intake remains.

Richard Spelman

Lorna McNaughton

What now?

While methane production is a heritable trait, the above discussion clearly indicates the trait is difficult to measure on a large scale.

Current thinking is that an option for New Zealand could be to measure methane on artificial breeding sires, similar to the approach being used by Irish scientists with their beef cattle.

This approach would require a validation step to ensure that methane output in lactating cows correlates with methane output in their (non-lactating) sires.

If successful, then all artificial breeding bulls, possibly including beef bulls in the future, could go through a 'methane measurement test' before being marketed as artificial breeding sires or in bull teams.

Mating 101

Farmers with a good level of reproductive performance need not scramble for the single best AB bull to mate to their best cows.

That's according to recently-published research*, which indicates the greatest strides in genetic gain can be achieved by identifying the herd's worst cows, rather than by identifying the herd's best cows.

In other words, the science suggests farmers are far better-off preventing lower-quality stock from producing replacements, focusing instead on using replacement-quality semen (from a team of bulls) to mate to, say, the best 80 to 90% of the herd.

The science de-bunks a commonly-held, intuitive, belief that the best way to maximise genetic gain is to mate the herd's top cows to the industry's top AB bull.

Methodology

David Chin, LIC GM Operations & Service and one of the authors of the peer-reviewed paper published in the Journal of Dairy Science, said the research involved surveying a wide representation of New Zealand herds (as at March 2017).

For each herd, a combination of mating parameters were applied, reflecting various mating strategies. For example:

i) mating one top bull to the top 5% of cows exclusively;
ii) mating the top 95% of cows to a team of bulls;
iii) mating the top 80% of cows to a team of bulls;
iv) nominating 10% of the herd to one bull, etc.

Because random chance has a significant bearing on which cow gets in-calf to an AB mating, and which of those pregnancies results in a heifer being born, each combination of parameters was simulated 1000 times (i.e. to identify how much variation might occur due to chance).

A total of 54 million herd matings were therefore simulated, Chin said.

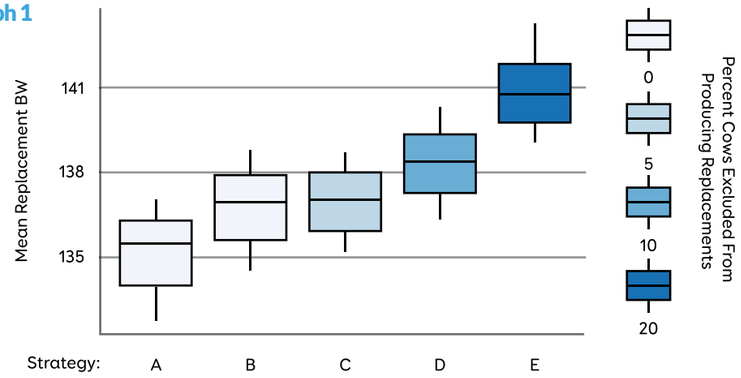
David Chin

The upshot

Findings told a fairly straight forward story.

"For each 10% of the herd's poorest cows that get excluded from generating replacements, the average breeding worth (BW) of the all replacements generated

Graph 1



increased by 3.8 to 4 BW, regardless of herd structure or bull team," Chin said.

"For many herds, even just excluding the bottom 5% of the cows from producing a replacement is a better strategy than mating the top 20% of your cows to the single-highest BW bull."

However, good reproductive performance underpinned all the findings, because the birth of enough replacement heifers remained paramount.

Chin also acknowledged the necessary trade-off between selection and inbreeding that farmers faced.

Examples of findings

Graph 1 (above) reflects a collection of herds that had the New Zealand average BW with a relatively narrow spread of BW between the cows.

There are five data sets plotted, each reflecting a different mating strategy:

A shows the outcome of a mating strategy that involved mating the entire herd with a bull team (these herds received an average 136BW return);

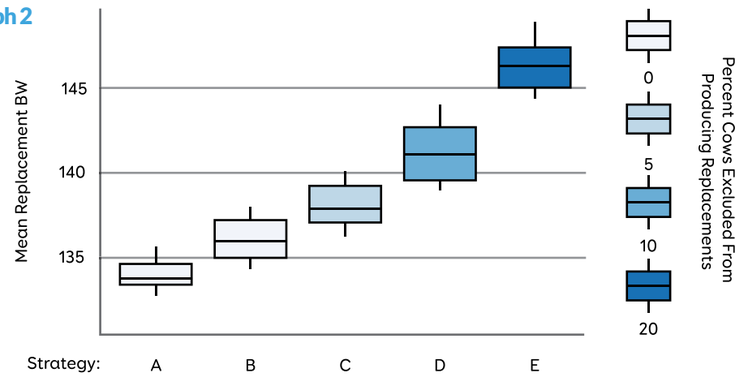
B shows the outcome of a mating strategy that involved mating the top 20% of cows to one nominated bull; the rest of the herd got replacement-quality semen from a bull team (these herds received an average 137BW return);

C shows the outcome when 5% of the herd is excluded from producing replacements; all other cows were mated to a bull team and there were no nominated bulls involved (these herds received an average 137BW return);

D shows the outcome when 10% of the herd was excluded from producing replacements; all other cows were mated to a bull team and there were no nominated bulls involved (these herds received an average 138BW return);

E shows the outcome when 20% of the herd was excluded from producing replacements; all other cows were mated to a bull team and there were no nominated bulls involved (these herds received an average 140BW return).

Graph 2



Graph 2 displays the same situation, but reflects a collection of herds that, despite having the New Zealand average BW, had a large variation between the cows (i.e. the spread of BW between the best cows and the worst cows was very wide); therefore, outcomes are more extreme.

Chin said use of bull teams such as LIC's Premier Sires remained an excellent strategy at AB time, but New Zealand farmers could better-utilise their money, and make greater gains, by using the product smarter.

"It just takes a little more effort in knowing which cows to, and which cows not to, target the product at," he said.

** Johnson T, Eketone K, McNaughton L, Tiplady K, Voogt J, Sherlock R, Anderson G, Keehan M, Davis SR, Spelman RJ, Chin D, Couldrey C. (2018) Mating strategies to maximize genetic merit in dairy cattle herds. Journal of Dairy Science;101(5):4650-4659. doi: 10.3168/jds.2017-13538*

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LIC Head Office, Corner Ruakura and Morrinsville Roads, Newstead, Hamilton, New Zealand, Phone: (07) 856 0700, Fax: (07) 858 2741