LIC®

THE BULLETIN

REFLECT RECHARGE ADVANCE

WINTER 2019

STAYING ENGAGED & FOCUSED

Malcolm Ellis
GM NZ Markets

New Zealand produces a high-quality health food, generally achieved on a low cost, pasture-based system, and therefore the dairy industry has a legitimate case to differentiate that productivity and market it to the world.

But as our sector goes through a well-publicised reset in light of drivers such as

(i) the inevitability of cow peak;

(ii) on-going environmental and regulatory pressure;

(iii) a tightening of rural lending policy, and;

(iv) the impact of declining land values in the face of a significant imbalance between supply and demand,

a level of uncertainty relating to the 'here and now' must be acknowledged.

However, I remain as positive and as motivated as ever when we project out to a wider/longer term view.

That's because industry fundamentals remain strong, and the world's population continues to grow, as does the general wealth of developing nations throughout Asia, Africa, and South America.

On farm, it's true that margins are tightening and smart decisions still need to be made, but I'd also urge that mature long term thinking is also a prerequisite as we look to position our farm businesses into the future.

We're seeing a significant increase in the focus and value of herd improvement which I'm personally extremely pleased to see, as for some time I've held the view that we, as an industry, undervalue good cows.The difference between top- and bottom-quartile of cow performance is extreme and often goes unnoticed or not fully exposed. This is changing as farmers identify that if they're not going to be milking more cows, they'll have to be milking better cows.

Our co-operative continues to make significant investment in to the area of genomic technology, and recently we've refined LIC's model which has added a step-change in the accuracy of the of a young bull's predicted genetic merit. The use of high quality bulls at a younger age has a significant impact on the 'breeders equation' by reducing the generation interval.

Be sure to get across the related article on page 20, contributed by Greg Hamill, LIC's genetics business manager.

LIC is also witnessing a significant increase in the use of A2/A2 semen, and the farmers I talk to say they're looking to safeguard their future.

Once again this is about positioning. At this point it's unclear what the future holds for Fonterra in this space, but what we do know is that they're working hard within their strategic relationship with A2 Corporation to create an A2/A2 milk pool around the greater Waikato for collection and processing within the 19/20 season.

Other processors are motivated in this direction as a point of difference which at the very least is driving a livestock premium for A2/A2 animals.

LIC's decision last year to position specific A2/A2 Premier Sires teams was timely. Just fewer than 450,000 inseminations were carried out by these teams, and that number is set to increase significantly this year. I enjoy the individual farmer stories in this area and that of Brendan & Stacey White is well told on page 24.

ON THE BIG PICTURE

As always LIC's winter issue of The Bulletin has all the good oil on the Premier Sires bull teams and I'm proud of the fact our co-operative maintains a powerful position on the RAS list with eight of the top-10 Holstein-Friesian bulls, seven of the top-10 Jersey bulls, and nine of the top-10 KiwiCross bulls, all of which delivers nine of the top-10 on the All Breeds' log.

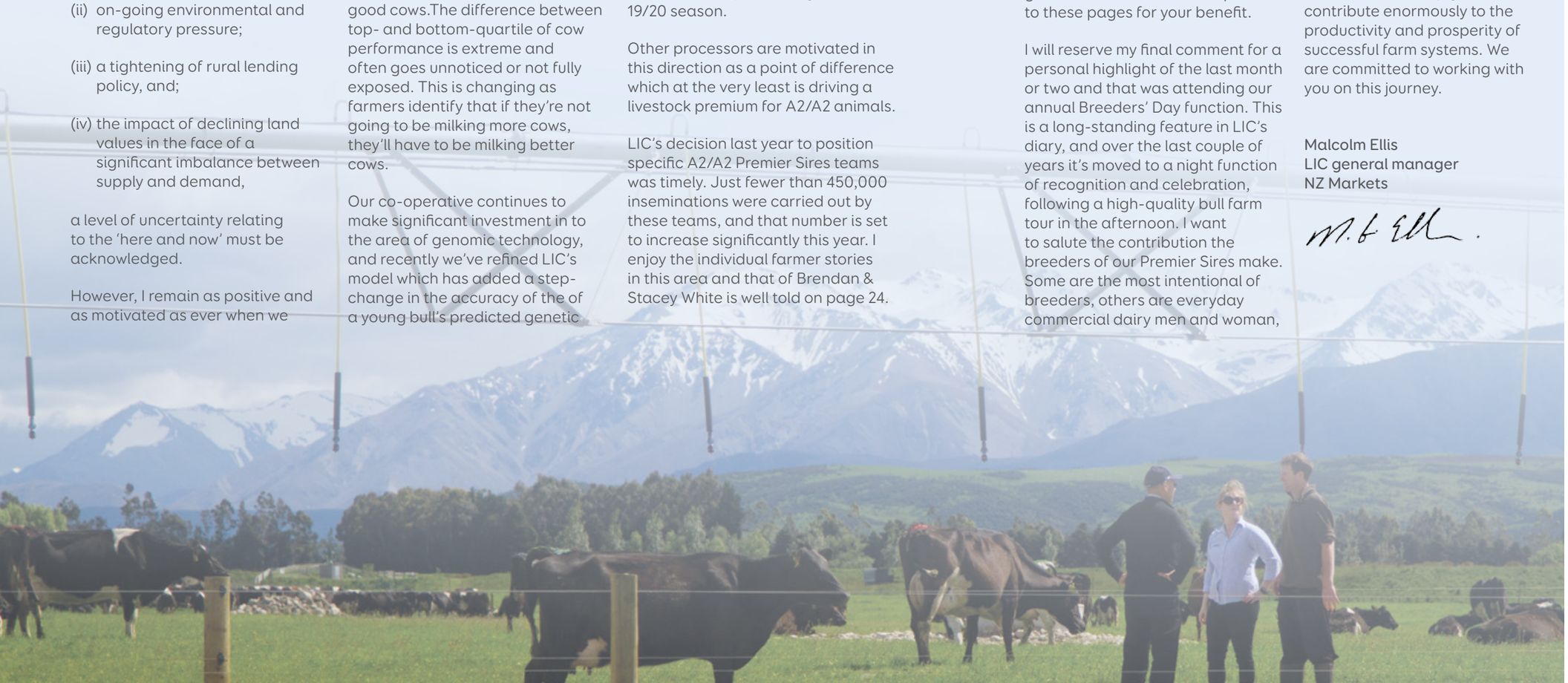
This provides a great opportunity for shareholders to reap the benefits on farm of the significant investment over time made into the breeding programme. I want to acknowledge the contribution Simon Worth (LIC livestock selection manager) plays, and the passion within the team he leads. Once again the team within the breeding scheme have brought a great deal of wisdom and opinion to these pages for your benefit.

I will reserve my final comment for a personal highlight of the last month or two and that was attending our annual Breeders' Day function. This is a long-standing feature in LIC's diary, and over the last couple of years it's moved to a night function of recognition and celebration, following a high-quality bull farm tour in the afternoon. I want to salute the contribution the breeders of our Premier Sires make. Some are the most intentional of breeders, others are everyday commercial dairy men and woman, some regular attendees of Breeders' Day, others attending for the first time, and in doing so list the accomplishment as a long-term farming highlight.

For me Breeders' Day is as co-operative as it gets: Shareholders coming together with a shared passion with the common achievement of having bred a Premier Sire, a bull that will make a significant contribution to the national herd.

I wish you all the best as we roll out of one dairy season and into the next. We operate in an ever-changing environment but the basics haven't changed. We need to get high-quality feed down the throats of highly-efficient cows. Very good cows contribute enormously to the productivity and prosperity of successful farm systems. We are committed to working with you on this journey.

Malcolm Ellis
LIC general manager
NZ Markets



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BREEDERS' DAY 2019 - WINTEC ATRIUM, HAMILTON, 8 MAY

LIC's annual Breeders' Day this year combined a bus tour of LIC's Newstead bull farm with an evening function including drinks, dinner, and a variety of presentations.

About 130 top farmers, from throughout New Zealand, attended the day.

Breeders' Day recognises industry players who greatly contribute to the progression of the national dairy herd through excellent attention to genetics: Their cow families bred bulls that went on to make the cooperative's 2018 Premier Sires teams. See more pictures of the day, page 4.

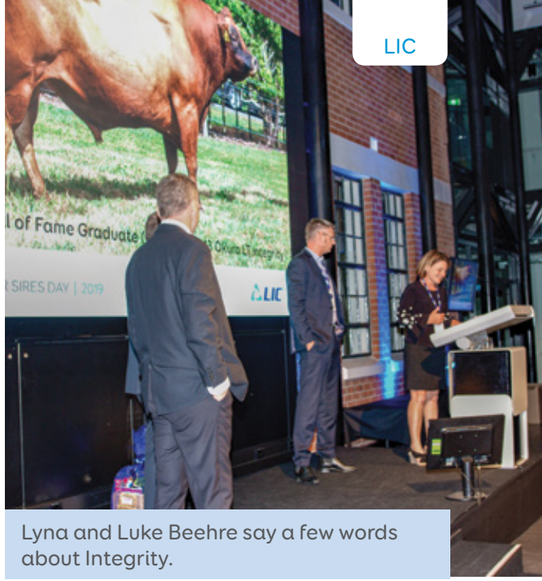
A feature of the day was the induction of a new bull to LIC's Hall of Fame (the 57th inductee to be recognised with the honour, see page 5).

Another highlight was the acknowledgement of 2019's Sire Proving Scheme Farmers of the Year, John and Pat Massey of Maungaturoto, Northland.

Honours List - breeders of bulls that made Sires teams of 2018:

Alan & Anne Looney	Opotiki
Allison Family	Outram
Andrew & Debbie Mead	Hawrea
Angela Fullerton and Glenn Clarke	Te Awamutu
Barry & Wendy Howse	Matamata
Barry and Jocelyn Moore	Hawera
Ben & Deborah Burmeister	New Plymouth
Bill & Michelle Burgess	Matamata
Bracelet Syndicate	Te Awamutu
Brad Payne	Cambridge
Brian & Barbara Fitzgibbon	Tauranga
Brian & Simone Shaw	Invercargill
Bryan & Jo Guy	Feilding
Bryan & Leanne Bailey	Stratford
Cameron & Sheree Coombes	Ohaupo
Charles & Ellen Mitchell	Murupara
Chris & Kerry Mullin	New Plymouth
Chris & Pauline Prattley	Leeston
Colin & Linda Megaw	Waitara
Dan & Julie Morgan	Opunake
David & Karen Camp	Ohaupo
David Stoupe & Tracey Wallace	Hamilton
Dean & Aimee Perrett	Hawera
Des Hickey	Ohinewai
Frank & Ida Van Heuven	Matamata
Fraser & Christine Macbeth	Nelson
Fredrick & Wendy Marshall	Inglewood
Gary & Sarah Carson	Putaruru
Gavin & Graeme Drysdale	Eketahuna
Geoff & Lynette Taft	Te Puke
Geoff Wilson	Outram
Goodwright Family	Waiuku
Graeme & Diane Hopson	Tokoroa
Graham & Glenys Bell	Te Aroha
Graham & Maureen Shaw	Cambridge
Hans & Margaret Schouten	Invercargill
Heather Keast	Featherston
Henk and Sandra Schrader	Invercargill
Huzziff Family	Foxton
Ian & Valerie Cocker	Palmerston North
Jennie Elliot	Otorohanga
Jim & Sue Webster	Waitara
John & Janine Bellamy	Ruawai
John & Jennifer Lawn	Opunake
John & Sarah Charlton	Hamilton
John & Thelma Bailey	Te Awamutu
John and Liz McKerchar	Fairlie
Keith and Jenny Backhouse	Geraldine
Luke & Lyna Beehre	Hikurangi
Lynskey family	Opunake
Mark & Diane Townshend	Ngatea
Mark & Norah Thompson	Te Awamutu
Mark & Patricia Scott	Waihi
Max & Daniela Padrutt	Hawera
Michael Holmes	Opunake
Murray & Janet Gibb	Taupiri
Murray & Julie Dickson	Te Awamutu
Nathan & Amanda Bayne	Oamaru
Neil & Julie Hamilton	Oamaru
Neville & Raewyn Tidey	Christchurch
Neville & Raewyn Tidey	Christchurch
Paul & Jill Langdon	Whakatane
Paul & Kirsten Midgley	Hawera
Peter & Christine Bonifacio	Temuka
Peter & Debbie Langford	Karamea
Peter & Johanna Crossan	Te Puke
Peter & Joyce Adams	Whakatane
Peter & Trixie Foote	Whangarei
Peter & Joyce Adams	Whakatane
Phil & Donna Lowe	Ashburton
Randall Family	Te Kopuru
Ray & Sandra Hocking	Takaka
Rob & Alison Thwaites	Hawera
Robert & Anne Siddins	Thames
Robert & Annemarie Bruin	Otautau
Roger Crawford	Tokoroa
Roger Shepherd	Whangarei
Rowan Priest	Te Aroha
Shaun & Kelly Bicknell	Murupara
Stephen & Kaye Mourie	Opunake
Steve & Nina Ireland	Temuka
Stewart & Kathryn Anderson	Otorohanga
Tony & Ali Van der Heyden	Tokoroa
Tony & Keri O'Connor	Timaru
Tony & Lesley Landers	Hawera
Troy Hughes	Pahiatua

L to R: Julie and Murray Dickson, Tony and Keri O'Connor



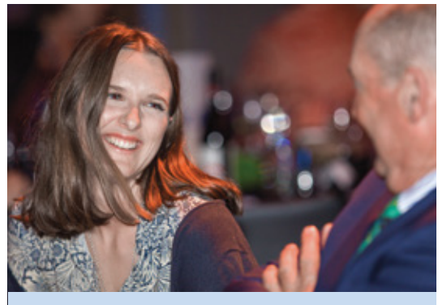
Lyna and Luke Beehre say a few words about Integrity.

L to R: Tony Landers, Stuart Anderson, Mark Townshend, Rob Thwaites.

L to R: Alan, Anne, and Paul Looney

John Massey entertains the audience. In the background are John's wife, Pat, left, and Ann Scott, right.

Stuart Anderson, left, and Ray Hocking.



Fiona McKercher of Shrimptons Hill Stud shares a laugh.

Angela Fullerton chats with Glenn Clarke, left, and Kaye Harding, right.

Integrity as a bull calf, 2010.

Luke & Lyna Beehre with a canvas of Integrity.

HALL OF FAME 2019

INDUCTEE: 311013
OKURA LT INTEGRITY

Entering LIC's Hall of Fame is a special recognition reserved for dairy animals whose achievements leave a profound impact on dairy farmer profitability in New Zealand.

The Hall of Fame occupies a special place in LIC's company culture. This year Integrity was acknowledged at Breeders' Day as LIC's latest bull to enter its Hall of Fame.

Malcolm Ellis, LIC general manager NZ Markets, says new inductees to the Hall of Fame don't necessarily happen every year.

"For a bull to be inducted into the Hall of Fame he needs to have had a significant influence on the dairy industry by producing genetically superior female offspring that farmers want to milk," Malcolm said. "Inductees do not only excel through the performance of their own progeny but also through the contribution of their sons.

"There was no doubt in our mind Integrity has met both of these criteria with ease."

Integrity was first made commercially available to the nation's dairy farmers as a young bull in 2011 after his ability to sire high quality dairy cows was predicted using genomic science.

The elite genetic merit that genomics predicted became reality when information from Integrity's first crop of milking daughters became available.

"His stats were remarkable and he continued to be selected to the Premier Sires teams as a daughter proven bull," Malcolm said.

Integrity appeared likely to become the first bull from any breed to achieve eight years in Premier Sires, after being preliminarily selected for 2019.

This would also create another first - a Hall of Fame inductee who is part of a current Premier Sires team.

"For most bulls, the Hall of Fame honour is received posthumously as the quality of a bull's offspring and its peak influence on the dairy industry is often reached after the bull is no longer with us.
With a BW of 243, outstanding capacity and very strong udder breeding values, he's still at the top of his game."

He's also proven to be an exceptional sire of sons.

"It's likely three of his sons will join him in this year's Premier Sires Daughter Proven team. He really is one of a kind."

Having bred 16 bulls that have gone on to become part of LIC's Premier Sires teams, Luke and Lyna Beehre's Okura stud in Northland is synonymous with bull breeding. But receiving this accolade is a first.

"Getting an Okura bull on to the Hall of Fame has always been a dream of ours," Lyna said. "Watching Integrity get his own proof and seeing his sons come through the ranks allowed me to hope he might get there one day."

"Breeding a bull that has added so much value to individual dairy businesses and our industry is a great feeling. We're very excited."

311013 Okura LT Integrity

- **Born in 2010, on Luke and Lyna Beehre's Hukerenui farm**
- **Sired by Lynbrook Terrific ET S3J (a 2018 Hall of Fame inductee)**
- **Debuted on the Premier Sires team in 2011**
- **229,300 inseminations**
- **35,889 daughters**
- **31 sons and 72 grandsons for the artificial breeding (AB) industry**
- **Current BW 243**
- **57th inductee, 27th Jersey**

LIC

National winners

from Maungaturoto: LIC's Sire Proving Scheme Farmers of the Year

The latest Animal Evaluation run places John and Pat Massey's 160-strong herd in the country's top-2% and top-3% in Breeding Worth and Production Worth respectively.

Not too bad for a herd that's been part of LIC's Sire Proving Scheme (SPS) for 29 years.

And that's perhaps a big part of the reason John and Pat were awarded SPS Farmers of the Year by the cooperative's genetics experts earlier this year.

In recognition of the contribution John and Pat have made to the scheme, the pair attended LIC's annual Breeders' Day event in early May.

"It was a fantastic afternoon and evening," John says, "it was a real honour to be recognised in front of the industry's elite breeders."

Pat agrees: "He's so stoked to get the award. John's very proud and the cows mean so much to him."

"Yes, I'm excited by the award," John says. "I can't believe they gave it to me - I feel like I should be the one giving the award to them (SPS). I'm the one that's benefited, I've gained so much over the years. Sire proving has just been part of the way I farm."

John and Pat's 70 hectare (effective) farm is located less than 3km from Maungaturoto, Northland, and milks a predominantly Jersey herd.

While John looks after day-to-day farm operations, Pat takes on the running of the local butchery in the heart of Maungaturoto, a business they've owned for several years.

Ask John and Pat how they've managed to breed such a quality herd using LIC's SPS semen, and John shrugs his shoulders and smiles, suggesting it's as easy as ABC.

"To be honest all I do - and all I've ever done - is follow the advice I'm given by the SPS.

"I'm Mr Simple. From day one in 1986, I did what the Dairy Board (SPS) told me to do. An example is if I'm selling or getting rid of cows, I just print off the PW listing and I sell the bottom portion of my cows based on PW, and PW alone. That way I end up with the best dairy stock to milk from."

With 100% recorded ancestry, the couple have confidence in their culling and replacement selections (John believes mis-mothering remains a big problem in non-verified herds: "As far as I'm concerned if your herd's not DNA-verified, it's not identified").

"When it comes to stock I know my decisions are bang-on because there's no parentage issues. Years back I took on the GeneMark service as soon as it was available; we used to do blood tests, but it's much simpler now with the tissue punch."

John admits he's also prepared to "take a short-term hit in production" to bring through a large cohort of young replacement stock.

"There's been times that I'll bring through up to 30% replacements. They're the latest genetics, and I know the time will come when they'll hit their straps and produce better than their previous generation."

John and Pat point out that while they don't necessarily get to nominate their own bulls, or get access to top proven sires on the market through Premier Sires, the bull is just half the equation.

"We constantly retain the best available stock from what we know are excellent BW and PW cows, so we're making strides that way," John says.

"You've got to remember that SPS bulls are narrowed down to be among the most-promising sires out there anyway, plus we're getting those genetics up to four years ahead of the industry, so our generation interval is squeezed way-shorter than other farmers."

John also mates his rising two-year-olds to artificial breeding, a practice that's been in place since he joined the scheme in 1986.

He's also meticulous about record-keeping, a discipline he puts down to belonging to SPS.

"I herd test five times a year and I'm crazy-careful with the set-up, numbering, no double-ups, and making no mistakes. I don't get MINDA queries. You've got to be systematic, and that discipline comes from sire proving."

John also credits their success to his willingness and determination to adopt new ways of doing things, despite initial frustrations:

"I'm prepared to change as I go," John says. "I've got a mountain of (MINDA) yellow notebooks from the past, but I forced myself to use the M-Note when it was introduced, then the palm-held, and then MINDA Mobile. Today all I use on farm is my i-pad with the MINDA app - it's all I need.

"It was uncomfortable for a while but I've got it sorted now. I can't say I fully understand the technology but I love what it's offered. They need to shut-down MINDApro; once they do that I'll be forced to use MINDA LIVE all the time."

Ann Scott, LIC Sire Proving Scheme manager, says John and Pat were named LIC's SPS national Farmers of the Year because of their quality record-keeping, with information consistently provided on-time.

Regular record keeping includes calving and weighing events, tagging, milking, TOP inspections, and scores for all SPS daughters, Ann says. "John is always a pleasure to talk with on the phone has a great sense of humour. He assists with LIC's Alpha Catalogue with daughter photography (including taking time out to train and groom the SPS daughters), with several LIC managers recently classifying the daughters as outstanding."

Regional winners of LIC's SPS Farmer of the Year:

Upper North Island:

Paddy & Tash O'Shea, Morrinsville

Lower North Island:

David & Catherine Smith, Hawera

Upper South Island:

Andrew & Michelle Robb, Greymouth

Lower South Island:

Johanna & John O'Callaghan, Invercargill

From the Breeding Desk

by Simon Worth, LIC livestock selection manager

What an absolute honour it was to induct the 56th bull into LIC's Hall of Fame last month.

It is without doubt that Okura LT Integrity, bred by Lyna and Luke Beehre, deserved this special accolade.

Breeders Day is where it really hits home for our team. The value we put on the relationship we have with our breeders is massive - after all, many of the bulls sire proven, and ultimately marketed by LIC, contribute so significantly to the dairy industry.

We won't breed a Hall of Fame bull every year - but it is certainly something to strive for!

Over the next few pages the team will take you through some of the interesting new graduates that will impact the respective teams this breeding season.

As Charlotte highlights, over the past year we've witnessed a truly impressive graduation rate to the *Ranking of Active Sires (RAS) list.*

Within the breeding scheme we're seeking the balance. Recently we've seen a resurgence in the value of fat, but protein too remains so very relevant. For this reason we seek a balance of both, along with the hugely important conformation and management traits

In reviewing how we're tracking on that front I'm absolutely rapt to present some impressive statistics in regard to your bulls.

For each of the breed categories, and within the top-100 bulls ranked on BW within each category, the table below highlights the number of LIC bulls that sit within the top-10 for each of these traits:

	Fat	Protein	Fat + Protein	Fertility	Udder Overall
HF	10	8	10	10	8
Jer	10	9	10	7	8
Cross	9	10	9	10	7

Although not all bulls are ultimately marketed, it's encouraging that the balance we strive for is evident. And given (certainly for the parent breeds) LIC have been sire proving about half the bulls in the industry, the clear supremacy displayed above demonstrates we're doing this in a highly-efficient manner.

As always, a whole-hearted thanks to our New Zealand breeders!

FRIESIAN TO THE FORE

by Danie Swart, LIC bull acquisition manager

When it comes to producing a type of Friesian bull that suits everybody's farming system, the challenge of breeding is more complicated than ever.

Each generation LIC's sire portfolio needs to be increasingly target-driven, and although most farmers still want efficient, healthy cows, with high breeding worth (BW), LIC must also cater to the needs of high input farms, once-a-day systems, A2/A2 herds, and various export markets with specific requirements for each country.

In future, health traits in particular will become more significant, meaning the importance of fertility and somatic cell count may need even-greater emphasis.

Obviously farmers want to milk healthy, efficient, high-milksolid cows, which consistently get in-calf every year and possess good udders that will last for multiple lactations.

As at 22 April, *DairyNZ's Ranking of Active Sires* (RAS) list shows LIC has 8/10, 16/20, & 41/50 of the top Friesian bulls in the artificial breeding market. Further analysis shows LIC has the top Friesian bulls for udder overall, dairy conformation, and capacity. The best seven bulls in terms of fertility are also in the LIC stable.

Of the current RAS list we are proud of the outstanding graduation rate of the 15-code bulls. Some of interest include:

115080 Westedge VHR Sweet As S2F
Congratulations to Paul & Jill Langdon of Whakatane who produced this high flyer bull.

Paul & Jill's daughter Kate aptly named this bull Sweet As.

This boy from Whakatane graduated with a bang in 2018 by jumping to the number one spot on the RAS list, and as at 22 April he remained in pole position. Sweet As has phenomenal production with a fat BV of 50kgs, protein BV of 39kgs, and a moderate liveweight of 43kgs.

Positive fertility and good longevity makes him even more popular.

115068 Hodges GFB Cutlass S3F
Thanks to Aaron and Colleen Hodges of New Plymouth for delivering this outstanding all-rounder.

Cutlass is a son of the very influential bull, Greenwell FI Blade S3F. Along with his moderate liveweight and stature, he is an outstanding udder improver with an udder overall BV of 1.02 - making him second-only to Wingman for udders across the top listing.

115132 Costers Polarise-ET S3F
Polarise, bred by the Coster family of Tauranga, is the only polled bull on the RAS list across breeds. As the fifth-ranked graduate across AB companies in the Holstein Friesian space, he's overcome the challenge of closing the BW gap between horned and polled sires.

Among his positive attributes are his high fat BV of 37kgs, low calving difficulty, and longevity of 348 days.

115054 Meander SB Wingman-ET S2F
Wingman is one of many excellent bulls from the Meander herd owned by Robert and Annemarie Bruin of Otautau.

Wingman is a Holstein Friesian NZ Discovery joint venture graduate, out of one of the most well-proven cows (April, VG 88), with multiple sons in sire proving.

With a protein BV of 29kgs, a fat BV of 28kgs, and a low liveweight of 19kgs, his daughters are surely punching above their weight.

Adding to the picture are his great somatic cell BV of -0.56, his awesome udder overall BV of 1.24, and an udder support BV of 1.34. Wingman is sure to appeal.

115021 Gordons AM Lancelot S3F
Bred by Stu & Sarah Gordon of Morrinsville, Lancelot is a bull to watch for the future.

He is an outcross (Mint Edition free) for many LIC clients, with Maelstrom as sire out of a Dauntless dam.

He could be regarded as an all-rounder, with a desirable milksolid-to-liveweight ratio.

Lancelot has plenty of positive traits with a fertility BV of 2.8, capacity BV of 0.55, and dairy conformation BV of 0.52. His daughters could be expected as medium-sized cows with enough robustness and good fertility.

Dam of Lancelot - 168 BW, 247 PW & 384 LW

115046 - Tralee GB Resonate-ET S3F
Thanks to Todd & Fleur Anderson who produced another top Tralee bull coming from a well-proven sire and dam. Resonate is sired by Greenwell FI Blade S3F and out of the outstanding Busy Brook Geris Rave S2F (VG85). Medium liveweight, easy calving, great longevity, and positive fertility are attributes for this bull.

With a calving difficulty BV of 0, he could be used confidently on Friesian heifers.

Two-year-old daughter of 115054-Wingman

LIC

SPOILT FOR CHOICE

by Taylor Connell, LIC senior sire analyst

Looking to get a bit more from a bit less?

The answer is Jersey - a breed known for producing more kilograms of milksolids per kilogram of liveweight.

The efficiency is due mainly to the strength of Jerseys' milkfat production.

And with continued increases we're seeing in milkfat value, it's of little surprise we're now seeing more 'brown' going into herds.
As far as top genetics go, look no further than LIC's exceptional Jersey stable.

In April, DairyNZ's *Ranking of Active Sires (RAS)* list saw LIC bulls occupying 21 of the top-30 Jersey bull places, including 7 of the top-10 spots and 11 of the top-15.

With the value component ratio (VCR) weighting in Breeding Worth (BW), the Jersey breed chalks-up yet another accolade: The golden boys occupy 25 of the top-30 spots in the 'all-breeds' sheet (according to April's RAS list).

It's certainly an exciting time for Jersey.

An exceptional era of Jersey bulls dominate both LIC's Premier Sires and Alpha offerings. All could warrant a profile, but for the sake of brevity, I've picked a few standouts:

314052 CRESCENT EXCELL MISTY ET.
The top dog. At 284 BW Misty is siring large, capacious, fertile daughters with sound udders – the complete package. A 20 BW difference between Misty and the next bull will no doubt see huge popularity for the season to come. Thanks to Mark and Diane Townshend for breeding this bull.

315009 RIVERVIEW AND DEXTER SJ2.
At -26 kg for liveweight, Dexter (a Degree son) is one of the larger graduates. Size is not all this guy brings to the table, however. Placid, capacious, fertile, and strong udders is perhaps the most fitting way to describe Dexter

Two-year-old daughter of 315009 Riverview AND Dexter S2J

daughters. His dam, grandam, and great grandam sit with a 290+ PW, boasting serious production power that simply adds to this impressive pedigree. Topping it off with a 222 BW, Dexter is sure to be a popular choice for the coming season. Well done to Robert and Louisa Lowe.

315008 PUKEROA AND BARATONE ET.
Congratulations to Alan and Vivenne Lockwood-Geck for breeding, at 264 BW, LIC's top 15-code graduate. Many would be familiar with Baratone's cow family, his dam being Pukeroa Mans Bracelet. 'Efficiency' sums up Baratone daughters, with a huge amount of Baratone's BW coming from his production traits. This, combined with a favourable TOP chart, sees Baratone daughters ticking several desirable boxes.

314022 LINAN INTEGRITY WINSTON.
The use of Okura LT Integrity as a young sire absolutely worked its magic here; the sheer production efficiency of this bull is phenomenal. And guess what – he doesn't do this at the expense of his udders!

For those wanting that extra bit of 'grunt', Winston is a must-have. Congratulations Colin and Linda Megaw for this exceptional bull.

315045 GLENUI DEGREEE HOSS ET.
Among the most well-rounded graduates, Hoss' profile paints a picture of daughters that any farmer would want to milk. Moderate size, productive, capacious cows that have quality udders to match. On top of this, Konui Glen Elmos Bowie in his pedigree provides outcross potential, making him a must-have for any Classic Pack this season. Great work Tony and Lesley Landers for breeding this fantastic bull.

Two-year-old daughter of 315045 Glenui Degree Hoss ET

315049 KAIMATARAU TERRIFIC PUNCH.
The Pedley family really have bred a winner here. Hall of Fame graduate (and farmer favourite) Lynbrook Terrific may no longer be around, but we're extremely lucky to have sons like Punch continuing his legacy.

At 1.06 for udder overall, Punch is the udder specialist, and those looking to fill the 'Terrific' void need to look no further than this guy. Add in the exceptional capacity, fertility, and farmer traits, there's little doubt Punch will prove popular this season.

Concluding:
In the Jersey space this season LIC farmers are spoilt-for-choice, with exceptional bulls in Premier Sires Daughter Proven and Forward Pack teams, as well as in LIC's Alpha offering.

If you want top BW animals that know how to milk, LIC Jersey is simply the cream of the crop.

SHADES OF RED & BLACK

SUIT YOUR FARM, SUIT YOUR COWS, SUIT YOURSELF

by Charlotte Gray, LIC sire analyst

Adjusting to meet market trends allows farmers to capitalise on consumer demand and price fluctuations: Leaning toward, or away from, key traits of the parent breeds is a legitimate business decision for any farmer wanting to specialise.

But the use of crossbred sires provides farmers with flexibility, which could be considered a key advantage as the industry continues to evolve (aside from food trends that drive prices for protein and fat, markets are also dictated by increasing regulation such as environmental and health and safety considerations).

With an ability to flex in response to emerging markets, farmers with crossbred animals can elect to chase certain traits from the parent breed(s), or strike a fine balance between the two.

LIC has traditionally excelled in the crossbred space, and it's pleasing to see this year is no exception.

In April's Crossbred *Ranking of Active Sires list (RAS list)*, LIC bulls occupy four of the top-5 spots, eight of the top-10 spots, and 21 of the top-25 spots.

LIC's 15-code graduates are outstanding and strengthen the above proposition further.

In the parent breeds, 20% of the Jersey RAS list is occupied by LIC 15-codes, 26% of the Holstein-Friesian RAS list is occupied by LIC 15-codes, and a phenomenal 40% of the Crossbred RAS list are LIC 15-code graduates!

Genetic gain progression is in full swing!

While RAS list rankings focus on BW, the excellent type being delivered is also a factor worth highlighting. The average capacity and udder overall BVs for these LIC RAS list 15-codes is an impressive 0.4 across the board.

Flick through LIC's 2019 Genetics Catalogue and take note of these 15-codes.

Here's a sample of my top picks:

515058 KAHURANGI IZABULL is the KiwiCross bull of the moment, continuing to occupy the prized number one spot on the crossbred podium at an impressive 261 BW.

Izabull comes to us from Peter and Debbie Langford's farm in Karamea.

His cow family (i.e. his dam and her full sisters and half-sisters) could be described as tanks - they're the classic crossbred that farmers envisage, with truckloads of strength in a moderate-sized package.

He packs a milksolid-efficiency punch, together with excellent fertility and somatic cell scores, and possesses the bonus of a short gestation length (-7.3 days). Udder is a strength here, particularly rear udder, 0.77 BV, and udder overall, 0.49 BV.

Two-year-old daughter of 515058 Kahurangi Izabull

515062 DUGGANS GAMEPLAN is another excellent Manzello son who is hot on the heels of Izabull, sitting in second place on the crossbred RAS list at 252 BW.

Bred by Rick and Jen Duggan from Thames, this A2/A2 sire sure delivers some production with a fat BV of 30kg and 6.1% fat test.

Type is an absolute strength for this bull, with an udder overall BV of 0.68 and dairy conformation BV of 0.30.

515011 LYNSKEYS LIAM is another efficient producer, and what he lacks in stature he absolutely makes up for in capacity with a BV of 0.90!

Couple the above with his udder overall of 0.59 and outstanding dairy conformation BV of 0.70, and I'm sure farmers would agree he's an all-rounder.

He also has an extreme somatic score BV of -0.69 and a fertility BV of more than 3%; if you feel your herd could do with a health or type boost then this bull is surely a must-have in the Alpha order this spring. A true credit to the Lynskey family who bred this fine sire.

515068 WOODWARDS SPOT ON is not just the most capacious of the LIC 15-codes on the RAS list, he's actually the most capacious crossbred bull ever (among the more than 1500 AE-enrolled crossbred sires), with a capacity BV of 1.20.

If you widen the net across the entire 25,000+ AE-enrolled bulls (across breeds), he's the fifth-most capacious overall!

It's not just about strength, however. With good solids, size, fertility, calving ease, A2/A2, 0.36 overall opinion, and 0.46 udder overall, Richard and Sue Woodward from Te Awamutu would be extremely pleased with this fellow.

515068 Woodwards Spot On

515025 SPEAKES SLIPSTREAM is another bull from Mark and Fiona Speake of Cambridge. While Spot On is king of capacity, Slipstream could be considered king of udders.

Slipstream is the best-uddered crossbred AE-enrolled bull alive today, with an udder overall of 1.10.

This bull seemingly has no shortfalls, and absolutely deserves a place in your AB bank this year.

2019 Potential Spring Holstein-Friesian **Daughter Proven** Team

Sire		BW/Rel%
115080	WESTEDGE VHR SWEET AS S2F	210/84
111037	SAN RAY FM BEAMER-ET S2F	189/99
113009	HAZAEL SH DISTINCT-ET S1F	187/89
114007	BUSY BROOK WTP VECTOR S3F	178/86
111036	ARKAN FM BUSTER-ET S2F	177/99
112034	CARSONS FM CAIRO S3F	175/98
114032	WOODCOTE FI MASTERMIND	163/85
115132	COSTERS POLARISE-ET S3F	162/83
115068	HODGES GFB CUTLASS S3F	154/78
115017	LANGEVELDS SRB VALOUR S2F	153/84

Sire		BW/Rel%
115023	TANGLEWOOD MT KAURI S2F	152/81
111067	BYREBURN PF ETERNAL S2F	152/99
112032	JACLES BOY JAKS S2F	151/88
115054	MEANDER SB WINGMAN-ET S3F	151/82
113043	ADAMS BR ULTIMATE S3F	150/87
114123	BACKHOUSE EO GRAVITY S2F	150/86
115046	TRALEE GB RESONATE-ET S3F	150/83
113120	BOTHWELL WT MAXIMA S2F	148/99
115021	GORDONS AM LANCELOT S3F	148/90
115107	LIGHTBURN BLADE GUSTO	140/83

WEIGHTED AVERAGES OF PREMIER SIRES - $166/99%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.25				quickly
Shed Temperament	0.23				placid
Milking Speed	0.18				fast
Overall Opinion	0.38				desirable

Conformation	-0.5	0	0.5	1	
Stature	0.67				tall
Capacity	0.34				capacious
Rump Angle	-0.16				sloping
Rump Width	0.32				wide
Legs	0.00				curved
Udder Support	0.49				strong
Front Udder	0.39				strong
Rear Udder	0.34				high
FrontTeat Placement	0.08				close
Rear Teat Placement	0.33				close
Udder Overall	0.44				desirable
Dairy Conformation	0.39				desirable

BW/Rel%	166/99
Milkfat BV	35 kgs
Protein BV	28 kgs
Milk BV	626 Litres
Liveweight BV	41 kgs
Longevity BV	420 days
Milkfat BV %	4.8%
Protein BV %	3.9%
Calving Dif BV	1.7
Fertility BV	2.7
SCC BV	-0.11
BCS BV	0.13

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

AE 22/04/2019

2019 Potential Spring Holstein-Friesian **Forward Pack** Team

Sire		BW/gBW/Rel%
115080	WESTEDGE VHR SWEET AS S2F	210/84
111037	SAN RAY FM BEAMER-ET S2F	189/99
113009	HAZAEL SH DISTINCT-ET S1F	187/89
114007	BUSY BROOK WTP VECTOR S3F	178/86
111036	ARKAN FM BUSTER-ET S2F	177/99
112034	CARSONS FM CAIRO S3F	175/98
114032	WOODCOTE FI MASTERMIND	163/85
115068	HODGES GFB CUTLASS S3F	154/78
118031	DICKSONS HD MYTH-ET S1F	263/54
117068	MEANDER SB ARROW-ET S2F	255/59

Sire		BW/gBW/Rel%
118070	TAFTS GR SUPERVISOR S1F	251/48
118068	BAGWORTH GI ORIGINAL S3F	232/59
116036	ARKAN MGH BACKDROP-ET S2F	227/62
118104	WOODCOTE G LOOKOUT-ET S2F	227/55
118001	WAIMATA SB RANSOM-ET S2F	225/49
118051	GREENWELL DM ALCATRAZ S1F	214/47
118042	DICKSONS MH MASON-ET S2F	214/59
117057	MAIRE GL GRADUATE-ET	192/54
117021	TAFTS TT OFFICIAL-ET S2F	191/55
117061	ALLANS SB ANTIDOTE S2F	187/58

WEIGHTED AVERAGES OF PREMIER SIRES - $194/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.34				quickly
Shed Temperament	0.32				placid
Milking Speed	0.21				fast
Overall Opinion	0.45				desirable

Conformation	-0.5	0	0.5	1	
Stature	0.63				tall
Capacity	0.31				capacious
Rump Angle	-0.07				sloping
Rump Width	0.46				wide
Legs	0.02				curved
Udder Support	0.46				strong
Front Udder	0.40				strong
Rear Udder	0.32				high
FrontTeat Placement	0.08				close
Rear Teat Placement	0.22				close
Udder Overall	0.43				desirable
Dairy Conformation	0.42				desirable

BW/gBW/Rel%	194/98
Milkfat BV/gBV	37 kgs
Protein BV/gBV	34 kgs
Milk BV/gBV	755 Litres
Liveweight BV/gBV	39 kgs
Longevity BV/gBV	556 days
Milkfat BV/gBV %	4.8%
Protein BV/gBV %	3.9%
Calving Dif BV/gBV	1.8
Fertility BV/gBV	3.6
SCC BV/gBV	-0.14
BCS BV/gBV	0.11

NB: the reliability of a team of bulls is always higher than using just one bull.
Shaded bulls are daughter proven with AEU BW & BV's 22/04/2019 AE
Non shaded bulls are genomically selected with LIC gBW & gBV's data.
Source date 22/04/2019

2019 Potential Spring Holstein-Friesian **A2A2** Team

Sire		gBW/Rel%
118053	GREENWELL GR GOVERNOR S1F	244/49
118049	DICKSONS DM LEVI-ET S1F	233/47
118071	GLENMEAD SB TRAPEZE S1F	220/49
116065	DICKSONS BG MANDATE S1F	212/58
118016	WERDERS MH OPTIMAL S2F	193/59
116013	STOUPES BG TRIUMPHANT S1F	185/58
118059	LIGHTBURN AB RIPTIDE S3F	183/53
116039	ARKAN HF FREELANCE S2F	177/59
118045	DICKSONS HF MENTOR-ET S2F	176/58
118023	TRONNOCO INCA SHAKIR S3F	175/58

Sire		gBW/Rel%
117046	TELESIS KJ EMIRATE S2F	173/60
118014	DEANS MH ATLANTIS S2F	172/59
117088	SPRING RIVER OL SCOUT S2F	172/56
116008	AZREEL MGH JOVIAL S2F	170/59

WEIGHTED AVERAGES OF PREMIER SIRES - $186/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.31				quickly
Shed Temperament	0.30				placid
Milking Speed	0.11				fast
Overall Opinion	0.36				desirable

Conformation	-0.5	0	0.5	1	
Stature	0.45				tall
Capacity	0.24				capacious
Rump Angle	-0.13				sloping
Rump Width	0.27				wide
Legs	-0.02				curved
Udder Support	0.43				strong
Front Udder	0.36				strong
Rear Udder	0.28				high
FrontTeat Placement	0.14				close
Rear Teat Placement	0.30				close
Udder Overall	0.40				desirable
Dairy Conformation	0.30				desirable

gBW/Rel%	186/98
Milkfat gBV	31 kgs
Protein gBV	34 kgs
Milk gBV	783 Litres
Liveweight gBV	31 kgs
Longevity gBV	602 days
Milkfat gBV %	4.7%
Protein gBV %	3.8%
Calving Dif gBV	1.4
Fertility gBV	2.8
SCC gBV	-0.07
BCS gBV	0.08

NB: the reliability of a team of bulls is always higher than using just one bull.
Bulls are genomically selected with LIC gBW & gBV's data.
Source date 22/04/2019

2019 Potential Spring Jersey **Daughter Proven** Team

Sire		BW/Rel%
314052	CRESCENT EXCELL MISTY ET	284/86
315008	PUKEROA AND BARATONE ET	264/83
314012	KAITAKA OI LEOPARD ET	255/91
314022	LINAN INTEGRITY WINSTON	251/91
311013	OKURA LT INTEGRITY	243/99
315045	GLENUI DEGREE HOSS ET	242/84
314004	BELLS OI FLOYD S3J	231/96
313023	CRESCENT EXCELL MONOPOLY	229/86
313046	OKURA OLM KAINO ET	228/98
315009	RIVERVIEW AND DEXTER S2J	222/83
314039	FOXTON MANZ CLAYTON	204/93
314005	OKURA ELICIT INVOKE ET	200/85

WEIGHTED AVERAGES OF PREMIER SIRES - $242/99%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.19				quickly
Shed Temperament	0.24				placid
Milking Speed	0.14				fast
Overall Opinion	0.30				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.87				tall
Capacity	0.40				capacious
Rump Angle	-0.05				sloping
Rump Width	-0.06				wide
Legs	0.05				curved
Udder Support	0.46				strong
Front Udder	0.57				strong
Rear Udder	0.67				high
FrontTeat Placement	0.09				close
Rear Teat Placement	0.05				close
Udder Overall	0.65				desirable
Dairy Conformation	0.38				desirable

BW/Rel%	242/99
Milkfat BV	23 kgs
Protein BV	3 kgs
Milk BV	-510 Litres
Liveweight BV	-48 kgs
Longevity BV	372 days
Milkfat BV %	5.9%
Protein BV %	4.4%
Calving Dif BV	-2.2
Fertility BV	1.7
SCC BV	-0.22
BCS BV	0.16

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

AE 22/04/2019

2019 Potential Spring Jersey **Forward Pack** Team

Sire		BW/gBW/Rel%
314052	CRESCENT EXCELL MISTY ET	284/86
315008	PUKEROA AND BARATONE ET	264/83
314012	KAITAKA OI LEOPARD ET	255/91
315045	GLENUI DEGREE HOSS ET	242/84
318021	GLANTON DESI BANFF	312/56
316035	FOXTON LT FIXATION S2J	291/61
318027	BELLS OARSOME COJACK	289/49
317023	SHEPHERDS LT FLINT ET S3J	289/61
318035	SHELBY BC LOTTO ET S3J	287/56
318009	TIRONUI SUPERMAN ET	279/60
318018	FOXTON DANE COBRA S3J ET	277/54
318034	SHELBY BC LUNAR ET S3J	268/56
318029	GLENUI BC LAREDO ET S3J	263/57
318012	LYNBROOK KING QUADRANT	257/59
318002	OKURA COYOTE LENNOX S3J	254/48
318015	GLENUI SUPER LAMAR	249/59

WEIGHTED AVERAGES OF PREMIER SIRES - $263/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.23				quickly
Shed Temperament	0.25				placid
Milking Speed	0.21				fast
Overall Opinion	0.29				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.77				tall
Capacity	0.40				capacious
Rump Angle	-0.11				sloping
Rump Width	0.00				wide
Legs	0.05				curved
Udder Support	0.40				strong
Front Udder	0.53				strong
Rear Udder	0.59				high
FrontTeat Placement	0.09				close
Rear Teat Placement	-0.10				close
Udder Overall	0.58				desirable
Dairy Conformation	0.40				desirable

BW/gBW/Rel%	263/98
Milkfat BV/gBV	27 kgs
Protein BV/gBV	6 kgs
Milk BV/gBV	-464 Litres
Liveweight BV/gBV	-41 kgs
Longevity BV/gBV	461 days
Milkfat BV/gBV %	6.0%
Protein BV/gBV %	4.3%
Calving Dif BV/gBV	-1.9
Fertility BV/gBV	3.3
SCC BV/gBV	-0.24
BCS BV/gBV	0.17

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

Non shaded bulls are genomically selected with LIC gBW & gBV's data. Source date 22/04/2019

Shaded bulls are daughter proven with AEU BW & BV's 22/04/2019 AE

2019 Potential Spring KiwiCross® **Daughter Proven** Team

Sire		BW/Rel%
515058	KAHURANGI IZABULL	261/83
514017	GLEN KORU BECKON	227/87
511011	PRIESTS SIERRA	214/99
515017	LYNBROOK KARTELL	208/80
515083	MCCAOSS MAJESTY	200/81
514018	GLEN KORU EPIC	196/84
513074	SCHRADERS TUSK	188/87
515068	WOODWARDS SPOT ON	187/81
515025	SPEAKES SLIPSTREAM ET	187/81
513050	WOODHEYS SPEED DIAL	186/98

Sire		BW/Rel%
515099	MULLINS FINEPRINT	185/82
513098	ARKANS BOUNTY	177/98

WEIGHTED AVERAGES OF PREMIER SIRES - $206/99%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.32				quickly
Shed Temperament	0.33				placid
Milking Speed	0.26				fast
Overall Opinion	0.40				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.06				tall
Capacity	0.33				capacious
Rump Angle	-0.31				sloping
Rump Width	0.22				wide
Legs	0.06				curved
Udder Support	0.43				strong
Front Udder	0.45				strong
Rear Udder	0.51				high
FrontTeat Placement	0.08				close
Rear Teat Placement	0.24				close
Udder Overall	0.52				desirable
Dairy Conformation	0.32				desirable

BW/Rel%	206/99
Milkfat BV	30 kgs
Protein BV	20 kgs
Milk BV	223 Litres
Liveweight BV	-5 kgs
Longevity BV	408 days
Milkfat BV %	5.2%
Protein BV %	4.0%
Calving Dif BV	-0.7
Fertility BV	2.4
SCC BV	-0.13
BCS BV	0.00

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

AE 22/04/2019

2019 Potential Spring KiwiCross® **Forward Pack** Team

Sire		BW/gBW/Rel%
515058	KAHURANGI IZABULL	261/83
514017	GLEN KORU BECKON	227/87
511011	PRIESTS SIERRA	214/99
515017	LYNBROOK KARTELL	208/80
515083	MCCAOSS MAJESTY	200/81
514018	GLEN KORU EPIC	196/84
518076	GREENWELL BLACKHAWK	320/48
517026	HOWSES SPRINGFIELD	294/57
518015	SMITHS HERALD	286/58
517043	GLEN KORU PROCLAIMER-ET	280/59

Sire		BW/gBW/Rel%
518047	CLARKES MASTERCLASS	274/47
518037	SHEPHERDS EGMONT-ET	273/48
518016	HORIZON ASCOTT	271/55
518017	HORIZON BARNSTORMER-ET	266/60
517067	CAWDOR PINNACLE	264/59
518056	JACKSONS BOCELLI	263/50
516015	HYJINKS SNAPPER	253/61
517021	HORIZON BANZAI	244/58

WEIGHTED AVERAGES OF PREMIER SIRES - $234/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.31				quickly
Shed Temperament	0.33				placid
Milking Speed	0.23				fast
Overall Opinion	0.38				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.07				tall
Capacity	0.39				capacious
Rump Angle	-0.15				sloping
Rump Width	0.20				wide
Legs	0.08				curved
Udder Support	0.49				strong
Front Udder	0.45				strong
Rear Udder	0.49				high
FrontTeat Placement	0.13				close
Rear Teat Placement	0.35				close
Udder Overall	0.53				desirable
Dairy Conformation	0.38				desirable

BW/gBW/Rel%	234/98
Milkfat BV/gBV	35 kgs
Protein BV/gBV	24 kgs
Milk BV/gBV	249 Litres
Liveweight BV/gBV	-4 kgs
Longevity BV/gBV	545 days
Milkfat BV/gBV %	5.3%
Protein BV/gBV %	4.1%
Calving Dif BV/gBV	-0.4
Fertility BV/gBV	3.5
SCC BV/gBV	-0.09
BCS BV/gBV	0.07

NB: the reliability of a team of bulls is always higher than using just one bull.
Shaded bulls are daughter proven with AEU BW & BV's 22/04/2019 AE
Non shaded bulls are genomically selected with LIC gBW & gBV's data. Source date 22/04/2019

2019 Potential Spring KiwiCross® **A2A2** Team

Sire		gBW/Rel%
518072	DEANS PROFESSIONAL	309/49
518038	WERDERS PREMONITION	262/59
517042	LUCK-AT-LAST INSPIRED-ET	258/59
518044	JUFFERMANS ENDURANCE-ET	258/57
518061	INNOVATION HOMEBREW	251/50
518001	ARKANS BALMORAL	243/61
517019	HANSARALLY RAD	240/57
518003	ARKANS SLINGSHOT-ET	239/48
518029	ROUBROEKS AMMUNITION	237/55
516058	VAN STRAALENS CATALYZER	233/56

Sire		gBW/Rel%
518025	WOODHEYS SOPRANO	232/48
518034	ELLISONS POLDARK-ET	225/59
516074	CROSSANS CRITICAL-ET	225/57
516043	ARKANS BOOMBOX-ET	223/59

WEIGHTED AVERAGES OF PREMIER SIRES - $233/98%

Management	-0.5	0	0.5	1	
Adapts to Milking	0.34				quickly
Shed Temperament	0.33				placid
Milking Speed	0.16				fast
Overall Opinion	0.38				desirable

Conformation	-0.5	0	0.5	1	
Stature	-0.11				tall
Capacity	0.39				capacious
Rump Angle	-0.12				sloping
Rump Width	0.11				wide
Legs	0.00				curved
Udder Support	0.52				strong
Front Udder	0.47				strong
Rear Udder	0.50				high
FrontTeat Placement	0.18				close
Rear Teat Placement	0.35				close
Udder Overall	0.56				desirable
Dairy Conformation	0.43				desirable

gBW/Rel%	233/98
Milkfat gBV	33 kgs
Protein gBV	26 kgs
Milk gBV	339 Litres
Liveweight gBV	-1 kgs
Longevity gBV	574 days
Milkfat gBV %	5.1%
Protein gBV %	4.0%
Calving Dif gBV	-0.2
Fertility gBV	3.4
SCC gBV	-0.04
BCS gBV	0.14

NB: the reliability of a team of bulls is always higher than using just one bull. Bulls are genomically selected with LIC gBW & gBV's data. Source date 22/04/2019

THE GENERATION GAME

by Greg Hamill LIC genetics business manager

Improved milking efficiency and better on-farm profitability is the outcome of genetic gain. And genetic gain is the result of a mathematical equation: (selection intensity x heritability x phenotype variation x accuracy of selection) / generation interval.

Reduce the generation interval from five years (i.e. years used by the industry to prove the value of a dairy bull) to as little as two years, and you'll make relatively massive strides in genetic gain, with each generation being generally superior to its forerunners.

Here, Greg Hamill, LIC genetics business manager, explains a new calculation the cooperative is currently using across its stable of young bulls, and how this will be of benefit to the industry.

LIC was the first company in the world to commercially-market young bulls based on estimates of their breeding values (BV's), including production traits, derived from the dairy animal's DNA.

That breakthrough year was 2008, but the lead-up to the launch was long and arduous - it came on the back of 15 years of research and development within the cooperative; millions had been invested in the cutting-edge genomic technology.

The goal with genomic selection is to increase the rate of genetic improvement in New Zealand dairy animals by narrowing the five-year gap in the generation interval (used via daughter proofs).

The use of genomics brings the generation interval down from the previous five year interval to as little as two years, thereby turbo boosting genetic improvement, and ultimately production efficiency, of dairy cows on-farm.

But the rate of genomic implementation, and improvement, has been slower in the New Zealand industry compared to its international counterparts, due to New Zealand's inability to utilise other countries' data sets.

This is mainly due to:

(i) New Zealand's unique grass-based seasonal systems, and,

(ii) New Zealand's need to run across-breed evaluations.

The above challenges call for innovation, and LIC's drive for finding new or better ways of doing things was the catalyst behind the use of a 'single-step animal evaluation model'.

The application of the single step animal evaluation model for New Zealand's multi-breed dairy population was undertaken by LIC scientists, using and knowledge and insights from many sources.

Use of the single-step model is to make hard-won gains in genomic predictions.

Specifically, the model analyses data from the entire New Zealand dairy population, using the animal records of approximately 30 million deceased and current, genotyped and non-genotyped, animals.

The model evaluates all information simultaneously (the previous calculation combined daughter proven data with DNA marker information). By combing all data at once - calculating breeding values for all animals in the population in a single-step - the risk of distorted results is significantly reduced.

Validation of the 11-code, 12-code, 13-code and 14-code cohorts of LIC's Sire Proving Scheme - animals which now have daughters with herd testing data - shows use of the new Single Step Animal Model has resulted in an 8% increase in genomic prediction accuracy (i.e. comparing genomic predictions to actual daughter proofs).

LIC believes the single-step method is a genuine breakthrough in genomic prediction accuracy, because it includes enhancements that:

- Simplify the number of genetic groups used to generate evaluations for missing parents, which ensures the number of animals in a genetic group is of reasonable size.
- Improve in-breeding calculations: The model has an ability to account for impacts of inbreeding, providing visibility about how related a sire is compared to the population he'll be mated to, and how that will change the expected performance of his daughters.
- Consider differences between overseas and New Zealand Holstein-Friesians, recognising these are, in fact, different breeds, and accounts for any hybrid vigour between these breeds.

Through validation the changes show increased stability and accuracy to LIC's results.

The cooperative is now working alongside New Zealand Animal Evaluation Ltd (NZAEL, a subsidiary of DairyNZ) with the goal of implementing improved methodology into the national base model to generate more-accurate breeding values and breeding worth.

Each year, genetic gain contributes approximately $400 million to the New Zealand dairy economy.

Because of its bulls and market share, LIC is responsible for nearly 80% of those gains, so it's imperative LIC continues to work collaboratively with NZAEL to drive rates of genetic gain.

What this means as an LIC shareholder

All young bulls continue to be marketed on the latest genomic breeding worths (gBW), calculated by LIC's genomic data source from the new Single Step Animal Model. The gBWs are displayed in LIC publications, including its website.

The goal is to implement the Single Step Animal Model in February 2020.

This will allow new values to flow through to MINDA and other LIC reporting systems (until that time, values reported come from LIC's previous genomic model).

The single-step calculation is contributing significantly to LIC's Forward Pack and A2/A2 teams, which differ from Daughter Proven teams due to the Forward Pack and the A2/A2 teams' inclusion of genomically-selected bulls.

Below are differentials between Forward Pack and A2/A2 bull teams compared to Daughter Proven bull teams, based on recent data from LIC's model. The differentials clearly show the Forward Pack and A2/A2 teams are predicted to outperform Daughter Proven teams, and this continues the trend of historical comparisons between the teams.

Come spring, it's expected the Forward Pack and A2/A2 teams will continue being 20 to 28 BW points superior to Daughter Proven teams.

Check out the previous pages (pp 14-19) for more detail on bull performance and breeding values.

	Friesian	Jersey	KiwiCross
Forward Pack	+28	+21	+28
A2	+20	N/A	+27

Skipping several generations through genomic selection results in rapid genetic gain

Protein & Fat a Balancing Act

by Gordon Fullerton, LIC genetics product specialist

Holstein Friesian high fat

The landmark changes to Breeding Worth in February had a big impact on the Holstein-Friesian breed, and I know this first hand, having been brought up on a farm that exclusively milks Holstein Friesians.

For years the black-and-whites have worked well for us.

Many people have asked me if we will change breeds following the recent changes, but at the end of the day you have to milk the cows that you enjoy milking: I like milking Friesians so why change when the Holstein Friesian still offers a lot of genetic gain in not just breeding worth (BW), but in fat as well!

The fact is the Holstein Friesian breed still has the highest fat breeding value (BV) of all breeds.

The average black-and-white cow has a fat BV of 11.8.

Holstein Friesian bulls

The February change saw significant increase in the value of fat relative to the value of protein, and this ratio is now formally established in New Zealand's national breeding objective (NBO).

The impact on individual bulls within breeds was big, but so too was the impact on breeds as a whole, which most farmers would be well-aware of by now.

In summary, February saw the following factors change within the BW index:

- The economic value for protein go down, from $6.06 to $4.38
- The economic value for fat go up, from $2.85 to $3.49
- The overall BW value in Holstein-Friesian bulls drop by an average of $27.70
- The overall BW value in Jersey bulls increase by an average by $23.30
- Crossbred bulls decrease in BW value by an average of $4.80
- The BW value of Holstein Friesian bulls decrease by an average of $17.70
- The BW value of Jersey cows increase by an average of $22.80
- The BW value of Crossbred cows decrease by an average of $0.70

So why did the HF drop the most even though they are the breed with the highest milkfat BV?

The economic value for protein went from $6.06 to $4.38, while the economic value for fat went from $2.85 to $3.49.

Remember, while Holstein-Friesian bulls possess the highest milkfat BV, they also possess the highest protein BV. In essence, what the bulls lost in the $1.68 drop in protein wasn't made up for in the relatively low $0.64 increase in fat.

The opposite occurred in the Jersey breed. Because Jerseys don't produce as much protein as their Friesian counterparts, nothing was lost, but plenty was gained. The ratio of fat to protein increased markedly, because of the Jersey breed's higher fat BV compared to its relatively low protein BV.

At the national herd level, there was an average BW decrease of $4.40, and this was due to the higher percentage of Holstein-Friesians across the national herd.

Although the February changes were some of the biggest we've seen relating to economic values, it better reflects what the milk companies are paying for.

LIC knew about this in time for spring mating in 2018, and was able to make informed decisions about which bulls should be in its Premier Sires teams: This saw lower use of bulls that were to see a significant drop in February (than what would have otherwise been the case).

This means calves been born this spring on the back of Premier Sires pregnancies boast the best-possible BW that LIC's sire selection experts could manage.

That's the beauty of Premier Sires' liquid technology: It allows changes to occur on any given day, regardless of breed.

This saw heavy use of the likes of breed-leaders for fat, such as 114032 Mastermind, who has recorded the highest-ever fat BV for all breeds, and currently sits at the top of the fat list at 52.8kg.

He was closely followed by 115080 Sweet As (the number one bull on the Holstein-Friesian RAS list), who, with 50kg fat, makes him the second-highest currently AE-enrolled bull for fat BV.

Both those bulls were used over the national herd a lot more than would have been the case if LIC didn't have the flexibility to make fast changes to its Premier Sires bull roster.

Protein remains relevant

While there's a lot of talk about fat, it's important to remember the protein component of milk is far from gone.

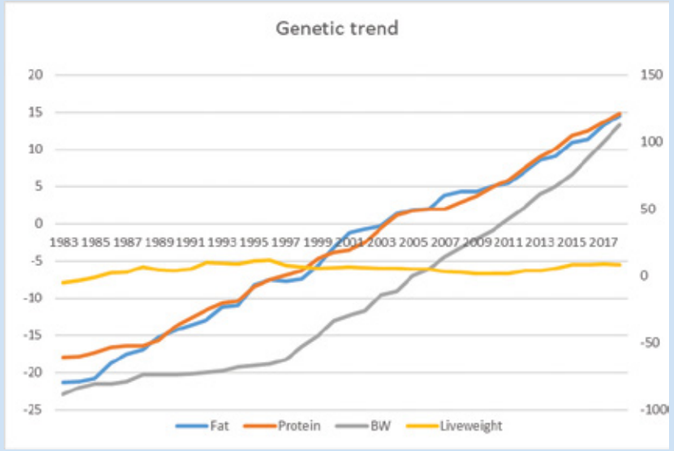
This year's VCR (value component ratio) in the economic values of BW is 1.01, which virtually sees the value of fat and protein at parity.

What this means for the Premier Sires teams of 2019 compared to other years:

This year sees the highest Fat BV weighted average for Daughter Proven and Forward Pack Premier Sires teams.

Although the protein BV weighted average has slightly decreased in the Daughter Proven team, combined fat and protein is still a lot higher. The upshot is that protein is still very-much contributing to the makeup of LIC bull selections.

	Daughter Proven		Forward Pack	
	Fat BV	Protein BV	Fat BV	Protein BV
2016	28	32	29	35
2017	28	32	29	34
2018	32	28	35	30
2019	35	28	38	34



Until February, fat generally had a much lower weighting in the national breeding objective compared to protein. The genetic trend above shows productivity of the national herd for both fat and protein has continued to rise, along with BW. In contrast, liveweight has remained relatively steady.

Fonterra has announced its value component ratio for 2019/2020 at 1.38 (three year rolling average).

Brendan & Stacey White with their young daughter

Downsizing opens gate to A2/A2 farm

Fast-facts:

- 120ha Orini farm, milking 380 cows (a mix of Jersey, 66%, and KiwiCross™/Friesian, 34%)
- Herd BW = 150; PW = 217 (top 1% of national herd)
- Mating: Six weeks LIC Alpha nominated genetics, using LIC's Customate software, followed by three weeks with Jersey natural mate bulls, then 10 days SGL semen. Top 60% of yearlings are also put to Alpha nominated semen.
- Brendan and Stacey will select their A2/A2 bulls this year on all-round traits and high-index criteria.

He's a dairy farmer with a passion for breeding, striving to be "at the front of the game."

She's a converted city-girl who fell in love with the dairy farmer, despite her aversion to typical milk.

"It doesn't agree too well with my system," Stacey White says.

"I used to have soy and almond milk and I've tried both them and rice milk; nothing's really appealed in terms of taste, and baking with those substitutes doesn't really work either."

So when Stacey became aware of A2/A2 milk 18 months ago, she tried it out and found it tasty, creamy, and, crucially, easily digestible.*

"I've become quite passionate about it."

Coincidentally, husband Brendan was at the time pondering his herd's future.

"Breeding is forever changing," he says.

"Years ago the family farm was all-Jersey, but we started toward the black cow because it was producing something others wanted to buy. Now there's a swing back to Jersey because of the price we're getting for fat. It's hard to produce the next generation of cow - how do you know for certain what people are going to want?"

The question loomed large because a developer was expressing strong interest in purchasing Brendan and Stacey's Te Kauwhata farm, which milked 650 cows.

There was an opportunity to move to an Orini farm, near Gordonton, but that meant downsizing to a 120 ha farm, capable of supporting just 380 cows.

"At the time A2/A2 hadn't really come on my radar," Brendan says.

"If we moved I knew we'd need to split the cows and sell quite a few, and the breeder in me said 'we'll simply take the best we've got' - and that was the focus initially (Brendan and Stacey's cows have traditionally been in the top 1% of the national herd in terms of both Breeding Worth and Production Worth)."

Soon enough, however, Brendan heard Synlait was to set up a dairy factory in Pokeno, and headlines indicated increasing market awareness, and continued future growth, of A2/A2 milk.

"I knew Synlait was strong in the A2/A2 market in Canterbury," Brendan said, "so the stars were beginning to align for us."

So, without any confirmation or contract signed, Brendan and Stacey began their A2/A2 journey.

It began in earnest merely 18 months ago.

"I talked to Tam (Tamara Findlay, LIC Agri Manager) about it, and asked 'what does the testing look like, what are the timeframes, etc'. We decided to commit to getting our entire herd (GeneMark) G3-profiled, which equated to 900 animals including our young stock.

"It was a day in February 2018 when we started ear notching (tissue sampling). We began at 7am and finished up at 8.30pm."

The capital outlay was upward of $30,000, with each animal costing $36 for a G3 (DNA) profile, together with confirmation of whether they possessed the A2/A2 allele.

"That gave us information, and information is power," Brendan says.

"From that we took the A2/A2 portion of the herd."

"The end-goal for us was that we would be on this farm, supplying Synlait, and getting a premium for our milk."

But anyone involved in the industry during the past 20 years would know that change is inevitable, Brendan says.

"So I'd registered my interest with Synlait, saying I'd have an A2/A2 herd and would you be interested in our milk. They came back saying they were interested in our milk, and the fact we were A2/A2, but they weren't in a position to say how much of a premium they would be offering, and when this would happen."

The uncertainty caused some anxiety for Brendan and Stacey.

"I thought, heck, we've gone down this track and tested all the animals, DNA'd the herd, it's cost us upward of $30k, and for what? We were a little deflated."

With the 2018/2019 season underway at the time, Brendan hadn't sold his remaining stock, which was still being milked at the former Te Kauwhata property (on land yet to be developed).

So he turned around and brought some of the top-performing, non-A2/A2 cows, to Orini.

Since then, more change.

Brendan says he recently agreed to a Synlait deal to pay him a 20c milk price premium for A2/A2 milk in the 2019/2020 season. Since 1 June the herd has therefore been 100% A2/A2 (the non-A2/A2 cows returned to Te Kauwhata at dry-off time in May).

At an average production of 450 milksolids per cow per year, Brendan calculates the 20c premium will return him $90 extra revenue per cow per year.

"So it makes sense. For the cows that turned out to be A2/A2, the test has cost us $36 per cow, and we're seeing an extra return of $90 for those cows in the first year," (Brendan concedes the $36 for cows that don't turn out to be A2/A2 is a cost, though the benefits of a full DNA profile remain).

Part of the agreement from Synlait means the processor covers annual A2/A2 testing of Brendan's replacement stock.

Brendan and Stacey are excited about their first season milking an exclusively A2/A2 herd, which begins in the shed from calving time.

"We're on the same farm and face the same input costs. We don't have to feed the cow any differently, or milk the cow any differently, and the milk still comes out exactly the same, so the 20c premium is, for now, essentially money for nothing."

***Disclaimer:** Some consumers are willing to pay more for A2/A2 milk because they believe it prevents the digestive problems they say they experience after drinking A1 milk. LIC does not necessarily endorse any of these claims.

LIC offers the following to any farmers considering breeding toward, or milking for supply, A2/A2 cows.

- Dedicated A2/A2 Premier Sires teams (Holstein-Friesian and KiwiCross). NB: The Jersey A2/A2 option is in the form of the Forward Pack as it will be selected to be exclusively A2/A2 bulls.
- A2 genotype testing using tissue samples, combined with DNA parentage testing (whole herd or individual animal).
- Milk test, via the herd test, to identify animals that carry the A2/A2, A1/A2, or A1/A1 allele.

AB SMOOTH-AS, AB SAFE-AS

Paul & Rosie Franklin, Springhill Dairies, Ongaonga (near Waipukurau, Hawke's Bay).

Milking 5000 dairy cows across four properties.

Last mating season, Paul and Rosie Franklin's business synchronised 600 heifers off-farm.

All the young replacements are traditionally raised at a grazier's property, and mated for the first time, before being introduced to a dairy platform.

But the old mating facilities at the property were less than ideal, making for an awkward AB process.

"All we had at the grazier's property was conventional cattle yards," Paul says.

"It was just a long race. You could put the first heifer securely in a front bail, but to inseminate all the others somebody was having to climb over the rails to get access to the race and all the other heifers in there."

The business was doing 300 inseminations per day, so up to three AB Technicians visited the property at various times over the course of two days.

"Sure, you could have one technician getting access to the heifer in the front bail, but to get through the job we had to have other technicians climbing over the rails to get access to the other young cows."

Beside the process inefficiencies of the old infrastructure, and significant stress for both technicians and cows, Paul concedes the risk to health and safety was the biggest concern.

Paul Franklin

Complete with concrete pad

The new AB facility was ready in time for last season's mating, with the concrete floor yet to be completed.

"We've known the facilities have needed upgrading for a long time."

A visit by a member of LIC's AB Facilities team prior to last season's mating seemed to provide timely impetus for the upgrade.

"It wasn't my property, but the owner provided a bit of timber for the job," Paul said.

"We also got a second-hand herringbone rail out of a cowshed from Dave Hands (a nearby farmer and LIC shareholder councillor). We made a gate coming off the side of the race, so we poured concrete, set some pipe in the ground, and welded the herringbone to it."

The innovative approach was endorsed by LIC's AB Facilities team, bringing the facility up-to-standard for safe and efficient artificial breeding.

"It was a lot easier than we thought," Paul said.

"There's about a dozen or so bails. The heifers all filed down the race and were in the correct position for the techs to do the insems. The way it's set-up now, we can have up to three techs working at a time."

Similar set-ups were possible for farmers who also dealt with old cattle yards.

"We got quite a bit of material for nothing, but all-up it took two guys a few days' labour, and it probably cost less than $3000 – a similar thing could be done with some straight pipe and concrete."

Paul was happy with the result, as were the AB technicians who were relieved of the stress associated with having to climb rails.

"It's good as gold, the secret is having the cattle flowing-in there and keeping them tight," Paul said.

"We have a trailer to work out of, so the techs can just set-up in there, load their straws, step out, and inseminate the cattle."

BETTER STANDARDS, BETTER OUTCOMES

David Hale, LIC national AB manager

LIC's reportable health and safety incidents in the 2018 season dropped by 47% following its nationwide campaign to target improvement of artificial breeding (AB) facilities on farm.

Makeshift facilities that are not up to standard expose AB Technicians to greater risk of injury while carrying out inseminations during mating time, says Dave Hale, LIC national AB manager.

After establishing a national standard for AB facilities, LIC sought to encourage farmers to invest in upgraded/safer facilities. A trained team of 30 staff carried out checks on farms that AB technicians were to visit during mating. Improvements to facilities were made by farmers based on the team's feedback.

"To date, just over 6500 of our approximately 8600 AB facilities have been checked," Dave said.

"We're finishing off the first round of checks with the aim to have inspected and graded every AB facility where LIC's AB technician service will be supplied in spring 2019 by the end of June."

To date, reportable incidents for the 2018 season (ending 31 May 2019) across the AB technician group has reduced by 47% compared to 2017, and 43% compared to 2016.

Before last season, the variation between facilities on each farm was vast, Dave said, with most of LIC's 840-plus AB Technicians carrying out their job in the confines of milking sheds.

"Balancing precariously on unstable platforms while inseminating cows wasn't out of the ordinary, and it wasn't good enough," he said.

"Establishing a national standard for AB facilities and implementing this nationwide is a first for New Zealand. It's meant all farms are treated fairly as they're checked and graded based on the same criteria."

The national standard includes requirements to ensure animals are held safely and securely and technician's footing is firm, safe, and on the same level as the animal.

"In addition to the bronze minimum standard, we set up silver and gold grades. This is a long-term initiative so we wanted to give farmers a gold standard to aspire to."

The primary motive of upgrades to facility standards was to reduce risk to people and their dairy animals, but secondary benefits included a higher chance of improved efficiencies and better breeding results.

The checks have been implemented as standard practice for the co-op and these are continuing throughout the country.

What's your SGL game-plan?

Use of LIC's short gestation length (SGL) semen has surged over recent years, becoming an integral part of the mating toolbox for an increasing number farmers throughout the industry, and the growth trend seems set to continue.

Additional income generated from last season's use of SGL has been conservatively calculated at $12 million by the cooperative's genetics team (this is purely in extra days-in-milk; note there are also reproductive and animal welfare benefits, although these have not been quantified).

When it comes to the specifics of how SGL is used, farmers have a variety of circumstances, so the motives and end-goals of its use differ. Here, we look at how three farmers used the product on their farm last year.

Stuart Neil

600 cow farmer
North Canterbury

Stuart Neill, a 600-cow farmer in North Canterbury, belongs to LIC's Sire Proving Scheme, and utilised SGL semen during the last two weeks of his mating period:

"With inductions ruled out, it's (SGL) one of the few tools we've got now.

"I'm a fan of SGL, we're using it every year. We use it to gain days-in-milk at the end of the season – we finish with short gestation to try and bring those later-calving cows forward a bit."

More recently, however, it's been the challenge of high empty rates in North Canterbury that's been the main driver behind the use of SGL, Stuart says.

"From what I understand mating nationwide hasn't gone too well recently, so SGL simply lets us mate for longer. Like everyone else, we struggle to get cows in-calf; empty rates are running in the high-teens for many people in North Canterbury, and it's hard to turn that around quickly.

"Cutting gestation by 10 days on-farm is good, but an ideal solution would be to have SGL shorter, perhaps another 10 days, allowing us to mate for even longer (without any impact on the calving window)."

Stuart says he's dealing with 30-40 cows that still need mating during the final few weeks of mating, but those cows can make a big difference in terms of the farm's empty rate.

"With SGL we're just trying to improve mating outcomes and performance. Going from 12% empty to 18% is what's really expensive, that's where the impact is – it's a lot of money."

LIC offers the following SGL solutions

- SGL Dairy
- SGL Hereford
- SGL Angus

SGL can reduce gestation length by as much as 10 days on farm

Chris Stirling

800 cow farmer
Otago

Chris Stirling, a Balclutha farmer milking 800 cows across two farms and two sheds:

With some intervention, Chris prefers to have 99% of the herd artificially inseminated within the first three weeks of mating, which for him starts on 5 November (about five days after the average date across Otago). The empty rate across the cows was less than 7% this year, and the farm boasts a six-week in calf rate of 79%.

Chris Stirling

Chris runs a system one farm and his repro results allow him to apply different strategy when it comes to the use of SGL:

"I'm not trying to put SGL in the cows during weeks 8, 9, or 10 to try and pick up those end-cows, because we don't really have a hell of a lot during those weeks anyway.

"Our plan is to (AB) mate for five-and-a-half weeks before the bull goes out for up to three weeks.

"The top 50 or 60% of the herd goes to replacement quality semen during AB. The remaining cows go to SGL Hereford… for the cows producing beef it gives them extra five or more days recover, cycle, or rest through October and in to the first week of November.

"I artificially inseminate all the heifers as well – they get a synchro.

"I'm trying to calve as many cows as I can in the shortest window I can.

"So we're getting 150-160 replacements from the cows, but then we'd do between 200 and 300 beef calves as well.

"We've got quite a large runoff so all that beef we'll normally take through a winter and sell it by November. When things were a bit grim (dairy payout) at $3.90 or $4, the beef was fortunately going through the roof, so that supplemented our income significantly."

Tim Dorn

Tim Dorn

330 cow farmer
Opunake

Tim Dorn, an Opunake (south Taranaki) sharemilker of 330 cows:

"We do 10 weeks of nominated Holstein-Friesian AB.

"M. bovis has been a factor behind no-bull, but I was only having the bull out for two weeks so in a way I thought 'what's the point'?

"When you compare the calving a (naturally mated) bull produces to the earlier-calving SGL provides – well to me, it was a no-brainer.

"We do about seven weeks of Holstein-Friesian nominated AB, then about 10 days SGL Hereford. During the first few rounds I also try to target the bottom 30% of the herd with SGL Hereford. After that I go over to SGL Dairy and I do that so that it brings me back into the window where the last Hereford calves.

"I basically use SGL to compact the calving. It allows me to bring those last cows forward, compact my calving, and give me more days in milk. Last season I put about 40 cows to SGL out of about 200 cows; those cows are calving 10 days before they otherwise would have, so for me it's massive in terms of days-in-milk and income."

LIC

IN THE SPACE™ RACE

Louise Collingwood

Top Otorohanga farmer Louise Collingwood can see a day when the lifetime performance of her paddocks will be ranked much in the same way as Production Worth ranks the lifetime performance of her cows.

"That's what could happen over the long term, once we've built up enough data from SPACE™ over five or 10 years."

SPACE™ utilises detailed satellite images of a farm's pasture cover, emailing results direct to farmers within 24 hours, allowing for immediate estimates of feed availability by individual paddock.

For now, the system automatically generates a feed wedge for instant use, with its main application being to help farmers with feed budgeting over the short- to medium-term, especially during winter and spring.

Louise, who peak-milks 360 cows on her 100 ha-effective farm (owned in conjunction with husband Tony), says using SPACE™ to replace farm walks and plate monitoring is a "no-brainer."

"Pasture management is the foundation stone of the entire business, really. Grass is the major feed source so it's just essential to manage it properly - to get the most out of pasture any farmer knows they've got to identify surpluses and deficits correctly, because it has a direct influence on quality.

"Without quality pasture it doesn't matter how good your cows are, they're just not going to milk well."

Louise knows a thing or two about quality dairying - her predominantly Jersey and Jersey-cross herd sits inside the top five percent of the national herd when it comes to breeding worth (BW).

She's been using SPACE™ for about a year now, and expects the system will continue to evolve and become an increasingly powerful tool as more data from her farm is gathered from season-to-season.

"I think in future we might be able to combine the information through MINDA LIVE and perhaps look at nutrient allocation, for example. Or we might look at trends and soil tests, and understand links between specific products going on certain paddocks. I'm sure we'll be able to sit and analyse things over time. The more data you collect, the more you can get into performance over time and find out why one paddock does better than others."

Prior to using SPACE™, Louise was plate-metering her entire farm.

"I'd enter the covers directly in to MINDA as I walked the farm, and from April to December I'd try to do that every second week.

"It would take me nearly three hours to do the walk, and in June and July I found I wasn't doing it as often as I wanted to, because life gets so busy, and gut-feeling isn't enough when you've got other staff involved."

She found out about SPACE™ through reading an article about a farmer who was using it in Canterbury, and became excited when she saw it launch in the Waikato.

"It took a while to set-up and iron out a few creases. We had a few hiccups because this is very much a mixed-contour farm. We got our reports quite regularly from about 20 May last year, and although we had issues with cloud cover we were getting enough for a decent gauge on growth rates and total cover."

Cloud cover impedes the ability of the satellite to pick up clear images of the farm.

"Generally if there's cloud cover here, there's also rain, so I wouldn't be going on a farm walk anyway," Louise says.

"But it does have its limitations - it doesn't read covers over 3500 dry matter (DM/ha); we had a paddock of annuals that got really long and we couldn't graze it because of high nitrate levels - it got up to 5000 (DM/ha) on the plate meter. But that's an outlier, it's not typical, and we knew about that."

Louise is dismissive of criticism that questions the accuracy of SPACE™.

"It's not perfect, but it's certainly more accurate than not measuring things at all.

"When a (SPACE™) report comes through we take it down to the cowshed where we keep a record of grazing dates on a big whiteboard. As cows leave the paddock we write the dates up, and we know what's coming up with the report so we'll write down the top 10 paddocks on the board, which is pretty much the grazing plan for the week.

"If something looks wrong we'll go and look at the paddock to be sure. Because we're a mixed contour farm, if it rains during the week and we don't want to go in to a particular paddock we make adjustments. SPACE™ is just another useful selection tool, but it's stopped me walking 8.5km every two weeks and saved me up to three hours a time."

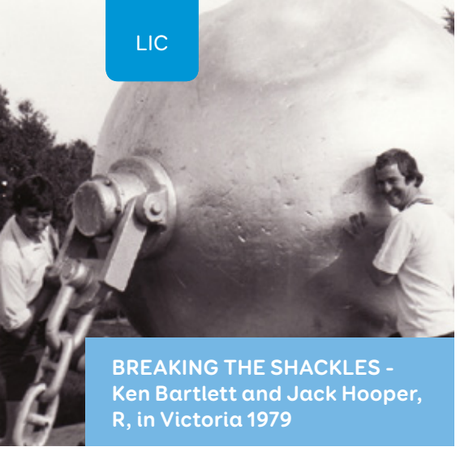
Cost is also not a factor for Louise (for a 100ha farm, the annual cost is $2000/annum).

"We don't bat an eyelid if we need to spend $6000 to feed palm kernel when the cows need it, so why would I debate spending a few grand on pasture cover reports that turn up in my inbox, which saves me three hours of doing farm walks each fortnight?

"This is management information, so even if I go on the figure of $100 an hour for professional advice, that's 20 hours of time and it's paid for. That's the same as me doing about seven farm walks, and I'd probably get about 20 SPACE™ reports a year."

Each SPACE™ report provides:

- An image of the farm, presenting pasture cover variation by colour, illustrating differences across the farm and within each paddock:
- An image of your farm showing any areas covered by shadow and cloud;
- A detailed feed wedge; and
- The latest paddock rankings, together with estimated dry matter per hectare (kgDM/ha) for each paddock.



BREAKING THE SHACKLES - Ken Bartlett and Jack Hooper, R, in Victoria 1979

45 years!

... but not one to be bolted down

You could say Jack Hooper is somewhat of a godfather figure at LIC, where he's constantly shared his knowledge, ideas, and leadership style with colleagues, customer-facing staff, and farming shareholders. Last month Jack retired, and LIC wishes him all the very best for his new ventures.

Here we reflect on the man himself.

After serving the same employer for more than four decades, Jack Hooper's leaving LIC with a strut in his step and satisfaction in his smile.

He's not going to miss the place, he says.

But the cagey smile slowly fades, the eyes go skyward, and his voice goes down an octave:

"I leave permanent employment with no regrets or sad feelings, because it's a career in which I've been provided with a chance to follow a passion, have countless opportunities, enjoyment, and reward at the end of the day.

"I haven't been bolted down in my roles here. People have known what I can contribute, and I've had a lot of freedom with LIC. I'm happy that I've given."

His career has over the years taken him throughout rural New Zealand, as well as across the globe, travelling throughout Australia, Europe, and North America. He's also travelled with family to Ireland and through Asia.

But in retirement he's got closer destinations in-mind.

"I've never been to Great Barrier Island or Waiheke Island, so I want to have a few three-day weekends. I plan to have one of those every month.

"And I'm going to do one-day of community service a week, probably at the velodrome where there's trike classes for adults, for people recovering from things like knee- and hip-replacements."

Jack enjoys cycling himself - his home in Cambridge is surrounded by quality cycleways.

A self-described avid sports fan, brought about participating in his youth as cricketer and rugby player, he says he'll watch almost any sport on television, and plans to do plenty more of that.

He's heavily involved in indoor bowls - he has been a national umpire and is past president of the Eastern sub-centre (a collection of local clubs). Currently, he's in his third year as president of Waikato Indoor Bowls.

Jack's also going to set his sights on plenty more gardening, a genuine passion he shares with his great mate of 30 years, Robert (Ace) Dance.

"We grow veges together," Ace says.

"Jack puts in the seed and gets them going at his house, then we'll transplant them in my patch - we'll be doing the cabbages and caulis today, for example. We grow a truckload, and we give them away to neighbours and friends - it's always a challenge to get rid of it.

"Jack loves it, as I do. He's got a bad back and can't bend like normal people, but it doesn't stop him gardening - last week we dug the spuds."

'Bad back' is an understatement. Several years ago Jack had a major operation, where significant build-up of calcium had grown down his lower spine, and around his spinal cord.

"The condition's proper name is spinal stenosis," Jack says. "I don't know what caused it, they think I may have had a broken back at some stage.

"The operation was to fuse my vertebrae. I've got two steel rods down either side of my vertebrae, with a line of 45mm screws going through and steel

FAMILY TIME - Jack and Linda with grandaughters Summah & Ruby

cages in between them, holding it all together. It was a six-hour operation and that's limited me a bit in recent years."

There's little doubt too that Jack will enjoy more time with his family.

He and wife Linda have two children - Nicola, a vet based in Wellington, and Stephen, a technical manager for Logic

VALUED MATES - Jack, right, & LIC bull farms colleague Cliff Harris

Wireless, which sees him setting up communications for one of the SailGP yachts (an international race series run by Russell Coutts and American tycoon Larry Ellison).

Stephen lives in Christchurch with wife Bex and daughters Summah, 7, and Ruby, 5, so regular trips to the South Island look set to continue for Jack and Linda.

It was in the early 1970's, when Jack met Linda at the Morrinsville Rugby Club (he played on the wing and at 2nd 5/8th). At the time Jack was in his first placement as a dairy consulting officer.

The couple got married in 1976, and almost immediately after that they moved to Rotorua for three years when Jack was transferred to the area with his work.

"He grew up in Kaitaia," Linda says, "so when his consulting role was shifted from Rotorua up north to Whangarei, he was more than a little familiar with Northland."

From Northland, Jack was in 1981 pulled back to Hamilton when LIC's main office was transferred from Wellington.

As evidenced by the number of people attending his official leaving-do in May, Jack enjoys unrivalled respect of both former and current LIC staff, and has made many friends along the way.

"When I was farms manager and looking for farm staff in 1990s, I had 40 people apply for two positions," Jack says.

"Of the successful applicants, one was Noel Mayston and the other was Cliff Harris (nearly 30 years later, both staff are still with the LIC Newstead bull farm, together with another farm staffer, Merv Brider, who was also recruited by Jack during the same era)."

"Cliff has a lot of values I like and share, so our close friendship, and that of our families, has grown out of that," Jack says.

Footnote: Despite his official retirement, Jack will continue his association with LIC by working as an independent contractor to the organisation, and he remains as a member of the cooperative's Breeding Advisory Group.

Jack of all trades, Master of LIC

Here's a quick summary of Jack's 45-year career at LIC.

- Began work on behalf of New Zealand dairy farmers in 1974 as a consulting officer with the New Zealand Dairy Board, based in Wellington, with stints also in Rotorua & Whangarei.
- In 1982 Jack was transferred to LIC's new Newstead headquarters, where he began work as part of the Livestock Selection team.
- Shortly after, Jack led the field operation of the Stolle Project, a programme that until recently was still running in New Zealand: regular injections of antigens (the genesis of which come from the human gut) are given to cows, resulting in hyper-immune milk for a high-value market in Asia.
- By 1990 Jack was appointed manager of LIC's bull farms, becoming responsible for three AB centres, more than 1000 bulls, 500 embryo recipients, and about 25 staff.
- During the 2000s Jack worked in LIC's Research and Development group, developing capability within teams to undertake large on-farm trials, and ensuring R&D were focused on the herd improvement issues facing dairy farmers.
- Since 2010 Jack has worked with LIC field staff which has included accompanying Agri Managers on visits to farmers all over the country. Along with others, Jack also helped establish LIC's Reproduction Solutions Team and LIC's 'Customer Watch' programme (providing many senior LIC staff the opportunity to discuss issues on farm and around farmers' kitchen tables).

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