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BULLETIN



BEST BULLS, TOP COWS

SPRING 2020



THESE COWS CAN MILK!



by Malcolm Ellis, LIC general manager NZ Markets

“These cows can milk!” - that is the call I really enjoy hearing from dairy farmers - and it's a deliberate statement that's increasingly rolled out.

Up and down the country we have experienced a more-than-useful spring.

There was the monster rain event in Northland early on and a couple of late-wintery reminders in the South, but generally Mother Nature has been pretty kind and the cow of 2020 has had the chance to express herself and hit her straps early.

I recently spoke with a highly-charged, fantastic, contract milking couple from Canterbury, and they excitedly talked of the cows hitting 2kgMS/cow/day on just the eighth collection of the season, with the majority of cows in at that time being heifers. Then, when we caught up a short time later the 1300 cows were 'in-the-grove' and rock solid at 2.5kgMS/cow/day!

This really is outstanding performance. What's more there are plenty of reports where there has

not been a kilogram of supplement fed since the first cow calved; this has been pure milk production and genetic expression from pasture - New Zealand farmers, and Kiwi cows at their profitable best.

That's what we expect, surely?

As a fourth generation farmer, I know it hasn't always been like that. I often tell the story that I was brought up with a piece of sunlight soap in my hand, and if we didn't use it before Christmas, you didn't get much milk after Christmas. This related to the practice of pre-milking washing and manual stimulation; lactation persistency was an issue, as was milk let-down. Temperament wasn't flash either.

But it doesn't matter how you look at it; the modern cow of 2020 is simply unrecognisable compared to the cow milked a generation ago. These cows today can milk!

I'm a big advocate of the modern cow and a staunch opponent of the 90%-feeding, 10%-breeding principle. Of course feeding and nutrition are important considerations within a farm system, but if the 90/10 breakdown is right, how do we explain the 160 kg MS difference between the top-quartile and bottom-quartile of all herd tested cows (i.e. this is corrected

for the age of the cow, her breed, and the location within which she is milked)?

The cow of 2020 is indeed a special asset, but within 'the herd asset' a big range of ability and contribution still exists. A good deal of this variation exists following the 'cow growth years' where some cows were retained that arguably shouldn't have been. While I understand their retention at the time, they remained bred from because they fuelled the growth model of the capital gain construct.

But today the focus is more on efficiency-of-conversion of those individual cows.

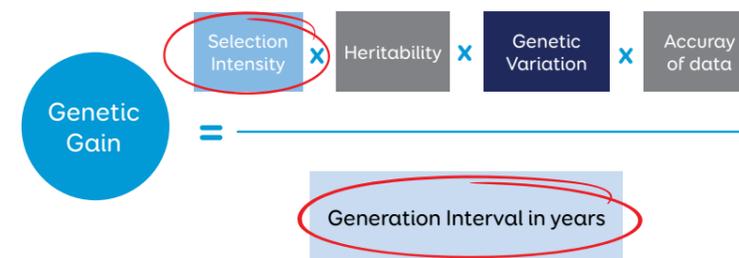
Increasingly we're celebrating the dizzy heights of the performance of some of these cows, and putting the critical spotlight on those at the other end of the bell shaped curve.

Farming by numbers

Genetic gain doesn't just happen. In reality, it's derived from the elements of the 'breeders equation'.

Personally, I was fortunate to have had the concept first explained to me (in my Massey days) by the late, much-celebrated, Colin Holmes.

The old adage of 'mate the best cow to the best bull to get the best chance of the most desirable outcome' certainly rings true.



But the breeders equation contains the real good oil, and I've been true to it for years on the farm within the 'Hillstar' & 'Te Aranga' herds, and then for the five years I spent within LIC's breeding scheme.

All elements of the equation have impact, but for me the two we have most control over (and influence on farm) are the two I've put a ring around.

Selection intensity/pressure should be a big driver. Herd testing to better understand 'the wheat from the chaff', and then focusing on the overall reproductive performance of the herd to earn the right to not involve those poorer cows in the propagation of the next generation is a key component of the rate of genetic gain.

Generation interval is also a real driver, the concept of which is often borne out on the female side with a farmer's intent to AB his or her yearlings, citing these as the richest reservoir of genetic merit.

The same goes with the boys, and this is where the co-operative investment in genomic technology comes in: Using DNA, and the identification of superior genetic markers, to inject the influence of superior bulls at an earlier age, further ramps up the rate of genetic gain.

I declared in 2016 that (if we weren't already) we, as an industry, were very close to cow peak. I celebrated the fact that cow growth had fuelled sector productivity and prosperity for 2-3 decades and I sensed at that time that we were going to need to put the heat on genetic gain and the principals of herd improvement to etch out the gains from the next chapter of our proud industry.

I think we are extremely fortunate to have a co-operative construct focused on this key driver in New Zealand, and at LIC we are powerfully and passionately focused on the responsibility to drive the elevated gains.

We are also super engaged on working with you to unlock the data and insights within your herd to help move the dial faster.

The spring of 2020 has again opened our eyes to the power of the modern cow but there is always room for improvement and we are determined to help deliver those gains.

All the very best as we continue to navigate the general uncertainty around us - but take a moment to be proud of the resilience that is dairy as we look set to power on and deliver the fifth consecutive milk price on the north side of \$6, despite the global disruption.

Malcolm

Malcolm Ellis

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Parentage mis-match rates can be as high as 30 percent in New Zealand herds

400kg to 520kg MS/cow in 10 years!

Selective breeding & parentage verification credited as key

In the past decade the Lincoln University dairy farm has reduced its dairy cow numbers by more than 100 without compromising production, with average per cow productivity increasing from 400kg MS per cow to 520kg MS per cow.

"That's good from both a business efficiency point of view and from an environmental point of view," says Peter Hancox, Lincoln's farm manager.

In 2010 the farm was milking 670 cows but today there are 560 cows on the milking platform.

Aside from sharper farm management practices, Peter credits a more-targeted approach to both breeding and production worth for the good gains the farm has made.

Previously a big user of Premier Sires, the farm has in recent years adopted more nominated options, with a focus on making faster strides in genetic gain through use of latest, genomically-selected, young bulls.

With a drive to reduce its bobby calf output, the farm is now utilising liquid A2/A2, Sexed Semen, and



Peter Hancox, Lincoln University farm manager, checks out the young stock

short gestation Angus, with an overall strategy to breed toward an F10 animal that has an A2/A2 profile.

KNOWING WHO'S WHO

While more targeted semen selection helps improve rates of genetic gain and efficiency on farm, another 'cog-in-the-wheel' is the application of GeneMark parentage testing, which contributes to the confidence in recorded ancestry.

The farm began parentage testing 10 years ago, and Peter says it has allowed for more-accurate decisions on:

- i) which lines of calves would be best to rear as replacement stock, or;
- ii) which cows would be best-mated for breeding purposes (as opposed to beef options), or;
- iii) which cows should be lined up for sale or culls.

The benefits of whole herd testing have therefore gone well beyond easy identification of calves to dams during winter calving (potentially eliminating the labour-intensive job of manually matching and recording animals in the paddock).

A CLEAR LONG-TERM VISION

Peter reflects on 2010, when the Lincoln farm faced a number of business challenges it was keen to confront head-on.

The challenges included a parentage mis-match rate of about 30% on both its 2009-born and 2010-born calves.

Initial DNA testing also indicated its 'top-160 keepers' was worryingly inaccurate; 11 of the 'keeper' stock had taken a spot ahead of other young stock that showed more genetic worth (based on better parentage/ancestry results, together with its genetic make-up).

The farm wanted to address its animal identification issues, Peter says, along with better attention in exposing the true under-performing stock (i.e. incorrectly identified as high breeding worth animals due to mis-mothering).

TIME FOR A FRESH FOCUS

Thanks to a combination of accurate management of stock, better repro, targeted genetics,

and GeneMark's ongoing DNA parentage identification, the farm has today overcome those fundamental challenges of a decade ago, Peter says.

"If you'd said to me 10 years ago, when our cows were averaging 400kg milksolids (MS), that they could get to 520kgMS, I would've thought that would be quite a stretch. But I know those sorts of gains are quite achievable now.

"Without GeneMark, we wouldn't have correctly identified and consistently kept the best genetics and made the gains we have... there's little doubt there's been impact, and there's little doubt it's a return on our investment.

"What we do know is that we've reduced cow numbers from 670 to 630, and then subsequently to 560, and we're still doing the same production.

"It's intriguing to think where we might be in five years time - can we get to averaging 550kgMS a cow? ... will that be the new norm for us?"

Peter says if the Lincoln farm can continue working on its repro and mating management while nailing empty rate and six-week in-calf targets, there was still significant room for improvement.

He says it's "quite conceivable" that in 10 years the farm could be milking 50 fewer cows while averaging 550kg-600kgMS per cow.



The average cow produces at least 100kg more milksolids than it did 10 years ago



by Greg Hamill, LIC genetics business manager

FOOD FOR THOUGHT

IS IT TIME TO UPGRADE YOUR MATING PLAN?

The mating decisions you make today will affect the milk entering your vat in 2023, so making the best genetic choice for your herd is worthy of consideration.

Dairy industry data shows that during the past 20 years, milksolid (MS) production has increased by an average of 5kg per cow, per year. It's estimated about 40% of those annual gains are directly attributable to the genetics used each year.

Further, the annual rate of Breeding Worth (BW) gain is approximately 10 points a year (this aligns with the general rule-of-thumb that \$10BW = approximately 5kg/MS).

Farmers using artificial breeding could therefore reasonably expect that the calves entering their calf pen next year will, on average, produce 5kg more milksolids per year than the cohort of cows reared this year.

But, for many farmers who are quick to embrace change, there's more.

And it comes in the form of tapping into genomically-selected bulls, which come with the advantage of reducing the generation interval by at least three years.

About 60% of LIC farmers now have breeding plans that incorporate teams of bulls comprising a

significant portion of genomically-selected sires.

BW differentials between LIC's Forward Pack (including genomically-selected bulls) and Daughter Proven teams range between 16 and 25 points; through use of Forward Pack, that's like receiving an additional year's genetic gain (i.e. two years gain for one)!

The increased uptake in Forward Pack is driven by the above proposition, as farmers acknowledge the increased accuracy of genomics (in recent years there's been an 8% increase in accuracy due to more advanced calculation methodology).

LIC's A2/A2 and Sexed Semen teams are also experiencing a surge in demand (both include genomically-selected sires).

By introducing Sexed Semen into mating plans, farmers are pushing genetic gain even further.

For the past few years, LIC's Liquid Sexed Semen results have consistently been within 5% of the Non-Return Rate (NRR) of conventional semen; at a 90%+ heifer calf ratio, this allows farmers to fine-tune who they get their replacements from.

Consider the difference between a poor producing cow and a productive cow; LIC data shows the national average between the top-quartile of cows and bottom-quartile of cows is 160kg of milksolids (considering only mature



The calves you rear this year can be expected to produce, on average, 5kg more milksolids per year than the calves you reared last year

cows within the herd).

Based on an average herd of 435 cows, that equates to about a \$60,000 difference in revenue.

The case to breed more replacements from the herd's better cows is certainly strong, and that's why more farmers are not only looking at ways to increase the percentage of cows that aren't mated to dairy, but they're also seeking to access the highest-merit bull teams they can.

And, by mating a herd's bottom-20% of cows to beef, a potential additional revenue stream is created - but the kicker is that the matable part of the herd is increased by approximately \$20 BW points, \$10 of which will be inherited by the progeny. That's worth another year's genetic gain!

But wait, there's more. If there's an opportunity to mate yearlings, this is like adding another year's gain into the mix (N.B. the first year that the practice is introduced).

Put simply, that's because the yearlings are the highest genetic merit animals within a herd. On average, 20% of the replacements would be generated by mating the yearling cohort, which equates to an additional \$10BW points to the progeny.

In a peak cow environment with significantly increased focus on productive efficiency of an individual cow, the rate of genetic gain you choose to make is a critical consideration.



by Simon Worth, LIC livestock selection manager

It's essential LIC shareholding farmers get access to the most elite dairy bloodlines - genetics that both deliver on the national breeding objective (breeding worth, or BW) while resulting in easy-care cows that last within the herd.

The LIC breeding scheme does its utmost to do justice to the above; the common fundamental is one of balance.

The over-arching guideline that LIC's bull acquisition team relies on is the cooperative's Livestock Selection Index (LSI).

Although closely aligned to the index (BW), the LSI allows the ability to allocate various weightings to different traits, such as udder conformation, for example.

Alongside factors within the LSI, weightings on conformation and shed traits are allocated, including:

Dam selection: Using LIC's extensive database, animals are narrowed down for possible contract matings. Thousands of three-generation pedigrees are viewed in the 'hunt' for the next potential bull dam, all of which fall within set criteria for breeding values (BV), and which will meet conformation thresholds.

Dam inspections: Final selection of contract animals takes place in January and February. The bull acquisition team inspect as many of the in-milk cows as

CONFIRMATION OF THE IMPORTANCE OF CONFORMATION

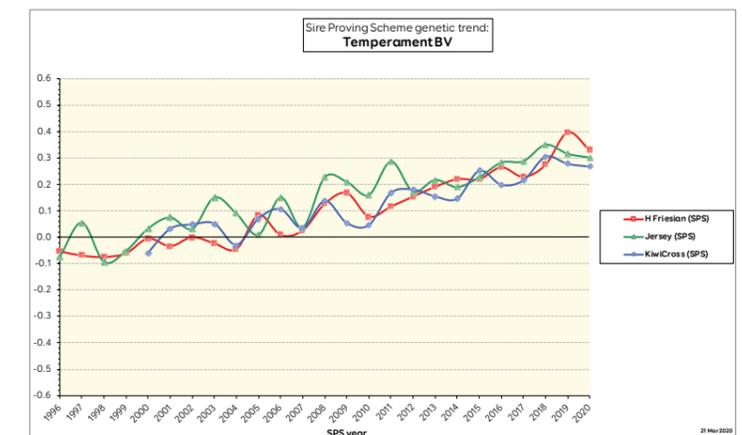
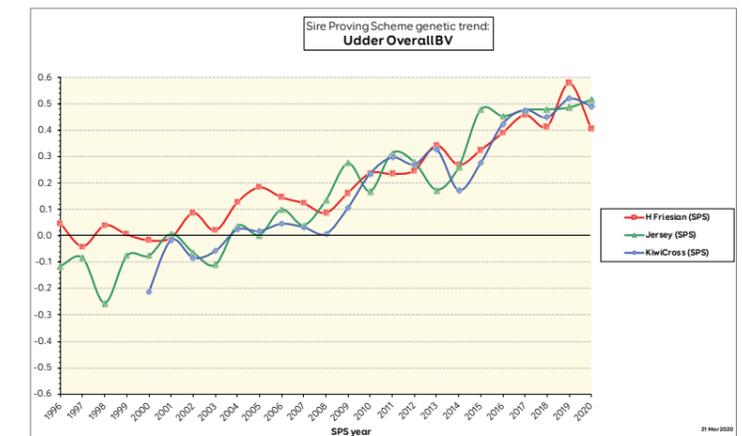
possible to ensure conformation looks suitable. Selection staff are qualified TOP (Traits Other than Production) inspectors. The team is mindful of animals that 'have it all on paper', but don't measure up when it comes to visual inspection. Importantly, it's during these on-farm inspections that feedback from breeders is canvassed (e.g. how the potential dam rates in terms of workability traits, such as temperament and milking speed).

Mating allocations: LIC's sires of sons are carefully selected. Given the potential influence these bulls have, it's imperative the 'best of the best' are identified. Making the grade as a sire of son demands a high LSI, and a desirable balance of traits including conformation breeding values.

Bull dam inspections: One year on from allocated matings, bull calves hit the ground. Of the 1700 that are genomically screened, about 230 are short-listed. Once making the short-list, bull dams are inspected/re-inspected by bull acquisition staff.

Genomics: The value and benefit of genomics escalates every year. Conformation BV's that start out as ancestry-only values are enhanced with genomics. Re-rankings occur, which ultimately impacts selection decisions.

The graphs below illustrate a few of the traits that have been emphasised by LIC since 1996, and how the trait values have tracked across each cohort within LIC's Sire Proving Scheme.





In September Ray and Sandra Hocking visited San Ray Beamer at LIC to celebrate the bull's massive-million milestone

A ONE-TONNE MILLIONAIRE

by **Simon Worth**, LIC livestock selection manager

Carterton couple Ray and Sandra Hocking recently visited LIC's Newstead bull barn in celebration of a bull they owned that became only the fourth sire in New Zealand history to reach the outstanding milestone of 1,000,000 straws sold!

San Ray FM Beamer-ET S2F follows in the footsteps of LIC Hall of Fame legends SRD Dawsons Belvedere, Kingsmill P A Walesa, and SRB Collins Royal Hugo.

It's very likely, given the emergence of the genomic era, that Beamer will be the last New Zealand bull to reach the magic million milestone.

As quoted by the renowned Holstein International magazine in September's issue: "Beamer is a remarkable bull - no wonder he became the world's 56th Holstein millionaire."

The story of Beamer is intriguing.

His dam, SRB Keredene Skelton Bust, was contracted for an embryo transfer (ET) programme with owners Stewart and Kathryn Anderson.

They saw the great potential in this animal, who went on to calve no less than 12 times and classify Excellent (conformation score).

It was the ET flush mating to the incredible (LIC Hall of Fame inductee) Fairmont Mint-Edition that was subsequently purchased by Ray and Sandra Hocking.

The initial motivation for the Hockings was the generation of heifer calves.

But when only bulls were born, and the Andersons extended the kind offer to take the young bulls back, that Ray recalls thinking: 'knowing my luck, if I leave them behind one of them will be a hit'.

He decided it would be best to take one of the three full brothers, but which one?

The bull in the middle of course, Ray says (the logic being that in his early days Ray had enjoyed the middle of the scrum).

Interestingly, the three bulls lined up the day Ray went to visit Stewart and Kathryn Anderson turned out to be Arkan FM Brilliant,

San Ray Beamer (in the middle, of course), and Arkan FM Buster.

All three bull calves went on to make an impact through Premier Sires (Buster with more than 640,000 inseminations). At one time all three bulls were within the top-10 Holstein Friesian bulls on DairyNZ's *Ranking of Active Sires* list.

Now aged 10, and with upward of 75,000 milking daughters in more than 5500 herds across New Zealand, Beamer still ranks within the top echelons of New Zealand's best dairy breeding bulls.

In fact, at 237 BW, he has been named for a sixth (and record-equalling) season within LIC's Holstein Friesian Premier Sires team.

And across the industry more than 50 Beamer sons, and many more grandsons, have been progeny tested.

His legacy seems set to live on through the next decade of New Zealand dairy breeding and beyond.

Farmers set record!

Using milk samples for further health tests on cows has never been so popular

by **Katherine McNamara**, LIC Diagnostics business manager

Farmer demand for health data on their cows is hitting record levels this season.

LIC's Riverlea laboratory in Hamilton expects to process and deliver at least 1 million individual diagnostic tests this milking season (on herd test samples from around New Zealand).

The specialised tests provide farmers with powerful information for better on-farm decisions when it comes to events such as pregnancy and dry-off, and in battling disease that can affect both production and reproduction.

Diagnostic tests on herd test milk include identification of bovine viral diarrhoea (BVD) and Johne's disease, both of which can have a negative impact on production and reproduction outcomes.

Another test, Staph aureus, indicates whether the cow carries nasty bacteria that will negatively affect its milk content.

Other tests can be carried out to find whether the cow's milk content is A2/A2 (as opposed to possessing an A1 allele), or to find whether the cow is pregnant.

Back in 2013, BVD was the only core-alternative test offered on herd test milk by LIC.

But today the cooperative has at least five tests in the diagnostics suite, all of which have significantly grown in popularity each year.



LIC tests millions of milk samples a year, each sample providing specific health data on the cow it's come from

LIC is set to process up to 400,000 milk pregnancy tests this season, with an increased level of processing capacity allowing the diagnostics technicians to keep up with demand.

Of the demand for this type of test, more than 30% comes from new customers who have signed up for the first time this season.

Of even greater demand is the number of farmers who want to learn more about the possible presence of Johne's Disease in their herd.

DairyNZ estimates Johne's Disease annually costs New Zealand farmers \$40-88 million in lost production (additional, less obvious, costs include lost opportunities for genetic gain in cattle, and costs associated with breeding, feeding, and raising young stock that may end up being culled).

Johne's disease has been present within the NZ national dairy herd for at least 100 years, but until recently there's been limited success in managing the disease on farm.

Testing and identifying subclinical animals from herd test milk samples, in conjunction with a good farm management plan devised alongside a vet, can help manage Johne's more effectively and efficiently.

This year LIC expects to process in excess of 600,000 milk samples for Johnes disease, where we'll identify individual cows that shed high levels of Johnes bacteria.

Culling those animals is important in control of infection on farm.

For more information on all LIC diagnostic testing contact your LIC Agri Manager.



LIC hopes its MINDA LIVE training teams will be back on-the-road to rural town halls in 2021 for scenario-based workshops

MINDA UPDATE 2020/21

Based on farmer feedback, significant improvements have been introduced to LIC's herd management programs MINDA LIVE and MINDA App this year, with updates to NAIT functionality, the addition of the Mobile Holding Pen (MINDA app), and the launch of the Removed Animals Report (MINDA LIVE).

Other enhancements include:

- tweaks to the print formatting for MINDA LIVE reports (more animals printed per page);
- a change to default groups of a report (allowing farmers to start with their selected group), and;
- changes to the Health Recording areas, making it easier to record what's happening on farm while keeping the records 'tidy'.

With continuing growth in MINDA App users, LIC remains committed to further developments: The addition of Notifications is designed in-part to let farmers know when an Animal Evaluation Run is, or, for example, when health treatment doses due.

Additional electronic identification (EID) wand support also features, providing farmers or their staff the ability to connect their iPhone to

a Gallagher HR4 or HR5 handheld wands.

More releases are set for introduction in both MINDA LIVE and the MINDA App, helping farmers record and utilise specific information that most-relevant to them; for example, being able to view and record notes and comments about their animals, or being able to create groups in MINDA LIVE based on newly-added attributes.

To support the roll out of the new features, LIC has over the past few years offered free MINDA LIVE training in localised areas throughout New Zealand, with hands-on workshops aimed at both beginner and intermediate users of MINDA LIVE, with other sessions focused more on MINDA App.



Some face-to-face MINDA LIVE and App training sessions took place in early 2020, but these were replaced by online classes

Earlier this year LIC was able to facilitate several sessions in Northland with National Account customers and vets, but Covid-19 circumstances put a sudden stop to further face-to-face workshops throughout the rest of the country. However, thanks to platforms such as Zoom, the programmes were adapted for online sessions, meaning many farmers could receive a training session in the comfort of their own home.

LIC received more than 850 registrations for the targeted training sessions between April and June. Each of the 22 sessions lasted no more than an hour, and a variety of features were covered, from importing animals into MINDA, to tagging animals, NAIT, and calving preparation.

The sessions were used also as an opportunity to capture feedback that helps in the continued development of MINDA LIVE and MINDA App.

Planning is now underway for a 2021 Roadshow that continues the traditional free training LIC has offered over the past few years.

More online training sessions will also be offered, although it's hoped the training teams will be back out to as many town halls as possible for scenario-based training in MINDA LIVE.

Keep an eye out on LIC's website and Facebook pages for dates and venues of the 2021 MINDA Roadshows, as well as updates to new features released into MINDA.



A huge amount of time, effort, and resource is invested to ensure young genomic bulls graduate with enough reliability for early release as Spring Bulls



by Simon Worth, LIC livestock selection manager

FROM THE BREEDING DESK

Wow, what a start!

As this Bulletin goes to print LIC's new graduates have beaten a path to the top.

Already we're witnessing a changing of the guard, with the new boys ranking first and second in the Holstein Friesian breed, first and second among all crossbred bulls, and easily first within the Jersey breed. Simply a phenomenal start!

These are the 17-code bulls; those that were purchased in 2016 and had semen first used in the Sire Proving Scheme (SPS) of 2017.

From time to time we may see bulls rank well on an index, (Breeding Worth, BW) however for various reasons the bulls are not always deemed suitable for widespread use.

But this year, given the number-one-ranked bull in each breed will

represent the Premier Sires Forward Pack team, LIC's sire selection team has plenty of reason to feel rightly proud of these well rounded individuals.

Over the next few pages the team will take you through some of the most interesting graduates.

Witnessing the success of the 'sires of sons' utilised in 2015 to create these graduates is hugely rewarding. Certainly the story about New Zealand's most recent millionaire (1 million straws), San Ray FM Beamer ET S2F, only gets better. He, along with the likes of Terrific, Inca, and Sovereign are making a tremendous impact.

The fact genomics identified many of the graduates early-on is encouraging and exciting. All three of the high-fliers that lead their respective breeds have already been utilised by farmers on the back of

genomic predictions. Genomics is clearly offering the industry so much, not least of which is an ability to get ahead of the game.

A huge amount of time, effort, and resource has been invested to ensure these bulls graduate with enough reliability for their early release as Spring Bulls, and we at LIC have the utmost confidence and faith in their ability to deliver.

Personally, it's extremely satisfying that we recognise the fantastic cow families sitting behind these emerging stars. We acknowledge the farmers who have worked closely with LIC's sire selection team, and we applaud them for their passion, investment, and cooperation.

The recent announcement of a significant remuneration increase for the breeders of LIC bulls has been a great one to share. The increase is well deserved, and on behalf of the entire LIC team, we thank you!



by Kelli Buckley, LIC sire analyst

Among the black and whites, who hold many litres, comes a desire to strengthen, or at least protect, udder conformation.

STORMING UP THE RANKS with the TOP in-mind

The milk continues to flow as the focus moves toward cow efficiency and quality over quantity.

The girls are pushing themselves harder, so it's only fair we give them the tools they need to ensure they are lasting. Among the black and whites, who hold many litres, comes a desire to strengthen udder conformation.

As herd test data and traits-other-than-production (TOP) information starts flowing in on 2018-born daughters, LIC is beginning to see its 17-code bulls fire, and we should expect to see continued shifts in how these bulls rank.

It's with much excitement that I highlight those selected as 'spring bulls' for this season's Premier Sires Forward Pack Team. A number of these bulls will also be available to purchase through Alpha Nominated.

117068 - MEANDER SB ARROW-ET S2F: It comes as no surprise this bull remains near the top (334/77 gBW), as he did when he was purchased back in 2016. This outstanding bull bred by Robert and Annemarie Bruin of the deep-south seemingly brings it all.

Arrow, currently in LIC's Friesian Premier Sires Forward Pack, steadfastly keeps his place in the team. He comes from two of the most well-known parents in the country: His dam Meander FMI April is a seriously milky cow with very good type, whose lactation worths (LW) have continued to exceed 400, and average 670kg milksolids a year over her past four seasons.

On his paternal side, Arrow's sire is none other than San Ray FM Beamer, who just this year hit the 'one-million-straws-sold' mark and is one of LIC's longest-serving bulls.

With data flowing in from 30 TOP daughters, Arrow's udder overall breeding value (BV) of 0.67 and fore udder BV of 0.66 shows he's one to pick to strengthen udders. With high

fertility of 4.7 and combined fat/protein BV of 84, Arrow is bound to be a top pick.

117038 - TANGLEWOOD GL HARDY: Bred by Murray and Nicola Hawkings in the Waikato, Hardy has an impressive 335gBW, and is the number one gBW graduate. Coming mainly from his exceptional fat breeding value (BV) of 53kg, this guy is all about producing daughters that milk.

His proven maternal line is a big reason for his impressive production BVs, being the grandson of Tanglewood FME Rain, who has bred several fine contract daughters with a number of bulls working their way through proofs.

Hardy is a Gordons AM Lancelot son, and he brings with him all that Lancelot has to offer, and more, with his high production, positive fertility, and farmer traits. With an udder support BV of 0.60 and rear of 0.48, his daughters are sure to see udders that are strongly attached and well supported.

117051 - BUSY BROOK SB FORTUNE: Coming from a well known and proven cow family, Fortunes' excellent dam Busy Brook Mill Fay S2F produced a phenomenal 780kgMS last season.

Another fantastic San Ray Beamer son, previously used as a Forward Pack genomic bull, he returns to the team with a 273 gBW, and he's been moving up consistently the past three AE runs. Fortune is a bull that will top efficiency with his positive liveweight-to-production ratio.

A massive congratulations to Nathan and Amanda Bayne from Oamaru for producing yet another outstanding bull.

117090 - TRONNOCO MH SAMBA-ET S3F: Here's an all-rounder with exceptional udder and production traits. LIC's biggest climber, Samba's come up a whooping 94gBW and is now sitting nicely at 238gBW, offering 44kg fat and 56kg protein. There's no doubt that daughters from Sambo will produce well.

Out of the very well know S family, it's hard not to be drawn to Samba's udder traits. With a fore udder of 0.89 and udder overall of 0.81 he's an udder strengthener.

The sire stack behind him is something a bit different, with the Moure Grove Hothouse x Woodcote TF Maximiser both having contributed significantly to the industry.

Breeding a Premier Sires bull is nothing new for Tony and Keri O'Connor from Timaru, well done to them for producing such an outstanding bull.

The power these new graduates bring to the Forward Pack team of 2020 is formidable.

DAUGHTER PROVEN

Other young bulls worthy of mention are the following three bulls that have made their way into LIC's Premier Sires Daughter Proven team:



117051 Busy Brook SB Fortune

117069 - MEANDER MH ARMOUR-ET S2F: At 231 gBW Armour is looking promising. The sire stack behind this Hothouse x Maelstrom x Dauntless offers something a little different, and boasts an impressive udder overall BV (0.58).

117052 - BUSY BROOK SB FORTIFY S2F: This is looking like a highly productive Beamer son with a fat BV

of 49kg alone. Farmers have loved these daughters (overall opinion BV of 0.48), so it's clear Fortify is shaping up to be a reliable, consistent, all-rounder.

117084 - LIGHTBURN MH RETRO-ET S2F: Another Hothouse son out of a very good Ignition cow. Right now Retro offers a power package of production, udders, and great fertility.



Dam of 117068 Meander SB Arrow-ET S2F

FLINT'S GOING OFF! ...

JERSEY BREED SPARKS UP SPRING MATING

by **Danie Swart**, LIC bull acquisition manager

It's been an unusually challenging year, but the disruption to our communities has been offset in the rural sector with a good, mild winter in many regions, and the best calving weather we've had in decades.

With a breed headline of Jerseys outperforming all other breeds when it comes to producing kilograms of milksolids per kilogram of liveweight, it's an exciting time as LIC's sire selection team analyses the new sire graduate information for the golden breed.

Not only does LIC have the absolute standout Jersey sire Flint in first spot among All Breeds (8 October Ranking of Active Sires list, or RAS list), the cooperative claims seven of the top-10 Jersey bulls on that list.

Here, I'm proud to showcase some of the early and exciting 17-code graduates:

317023 - SHEPHERDS LT FLINT ET S3J: Topping the RAS list for Jersey bulls and for All Breeds, this bull bred by Roger Shepherd of Whangarei is simply among the most phenomenal production bulls ever, and has already been selected for Premier Sires.

To put Flint in perspective, his combined protein and fat breeding

value of 87.1kg launches him into the top production bracket for all breeds; his fat BV of 55.8kg and protein of 31.3kg are simply outstanding.

Combined with good size and an udder overall breeding value of 0.67, this boy will surely be in every Jersey breeder's conversation.

Flint is sired by Terrific, one of the most influential sires in the breed, and is backed by the very good dam Francesca, herself sired by Murmur and from a high production cow family.

Francesca has a combined fat and protein breeding value of 61kg, a PW exceeding 700, and an LW of more than 500.

Flint's granddam was also a high producing cow, with a PW above 500 and LWs greater than 400.

The first five cows in Flint's maternal line average eight lactations each, confirming the longevity of the family.

LIC is fortunate to already have exciting and high ranking sons out of Flint, including Popeye and Jazzman, both of which are already Sires-of-Sons.

Flint will receive considerable use in this year's Premier Sires Jersey Forward Pack.

He is certainly shaping as one of those very special bulls that comes along and simply dominates



317023 - Shepherds LT Flint ET S3J

contemporaries of all breeds at a given point in time.

These are indeed exciting times for the breed.

317006 - WILLIAMS PCG TENOR: Another exciting bull, Tenor comes from the Totara Dairy Ltd herd of Mary Williams in Northland.

The Williams herd is renowned for having produced excellent bulls and cow families over many years.

Tenor is a promising new graduate, out of the sire Goldie and the solid T cow family, a family with excellent classification scores and production performance.

Tenor has a whopping longevity breeding value of 586 days. His sire Goldie is having an increasing impact on the national herd, with

many sons and great daughters.

Tenor is currently in the Premier Sires Forward Pack team and is a bull to watch in the future.

317034 - HEUVEN SUPER WISEGUY: Wiseguy is Waikato-bred by Frank and Ida Van Heuven. He is a son of the top bull Superstition, and it's no surprise that Wiseguy is also breeding daughters with good size and liveweight.

Positive attributes include his high fat and protein, good fertility (4.4%), and likeable management traits. Notable too is the longevity and high production down the maternal line, with 10 and more lactations for three most direct descendants in the pedigree.

Wiseguy debuts in this year's Premier Sires Forward Pack.

317025 - MAXWELL GOLDIE MATAI S2J: Matai is another Goldie son, bred by B & B Maxwell Trust in Taranaki and out of a high production Terrific dam with PWs and LWs that exceed 400.

Matai is regarded as an all-rounder bull, with high breeding values (fat of 36.2kg and protein of 14.4kg), a capacity BV of 0.78, and a dairy conformation BV of 0.64.

Having lifted his BW by 37 points over the last Animal Evaluation run (8 October), he's definitely another exciting bull to watch, and he can be found in this year's Premier Sires Daughter Proven team.



Jerseys outperform all other breeds in producing kilograms of milksolids per kilogram of liveweight

Reports of the good calving period has been followed by great production flows on farm and a smooth start to the mating season



LIC's KiwiCross Premier Sires Forward Pack consists exclusively of A2A2 genetics, so combined with high-BW, your herd will be future-ready when you choose this team

CROSSING NEW FRONTIERS: THE KX GRADUATES

by **Camdon Bland**, LIC sire analyst

- **Who's proving themselves to be the best of the best?**
- **Who's deserving of a future spot as a member of Premier Sires?**

Following the cohort of bulls purchased in 2016, it's been captivating for LIC's bull acquisition team to follow their progress over the past few years.

There have been multiple upward movers on the KiwiCross breeding worth (BW) ladder, and many of the bulls have made more-than-significant gains.

Although it's still early days, and there's much more information to come, there are definitely star bulls in-the-making who are showing their superiority, who appear especially well-balanced from production to type.

The following are a handful of examples of LIC's outstanding new KiwiCross graduates:

517043 - GLEN KORU PROCLAIMER-ET: Remaining the top sire from his genomic days, Proclaimer pushes the boundaries on milksolids at almost 100kgs, and, combined with his liveweight BV (-1.3), it's crystal clear that efficiency is this guy's main game.



517043 - Glen Koru Proclaimer-ET

Proclaimer also brings a tidy array of udder, fertility, and capacity BVs to the table.

He comes to LIC via breeders David and Karen Camp, who are nowadays enjoying a well-deserved retirement from dairy farming.

However, the Camps leave a legacy of passionate breeding and a reputation for 'getting it right' when it comes to the breeding of both dairy cows and dairy bulls.

It's little wonder they've bred bulls like Proclaimer, Epic, and Beckon (with Beckon still ranking third on the

Ranking of Active Sires list published by New Zealand Animal Evaluation Ltd).

The breeding behind Proclaimer is fantastically eye-catching, being an Inca son and out of two Hall Of Fame KiwiCross sires in Showman (dam) and Northsea (grand dam). Both these dams are phenomenal cows, who've been pumping out the goods from day one, each with sky high production worths (PWs) in excess of 500.

Proclaimer is certainly a sire worthy of both Premier Sires Forward Pack and Alpha selection.

517026 - HOWSES SPRINGFIELD:

Next in line and already making a name for himself, Springfield has a powerhouse breeding worth (BW), boasting good solids and fertility BVs.

Daughters from Springfield seem set to follow in the footsteps of his sire Sovereign, with remarkable udders and capacity to match - just the all-round balance LIC's sire selection team strives for!

Bred by Barry and Wendy Howse, who farm at Matamata, Springfield's maternal line features an exceptional row of cows stretching right back to his great granddam.

This cow family is celebrated, and has further bulls still to graduate.

They pride themselves on good sound udders and dairy conformation, and push themselves to new levels of production in the shed season after season.

517042 - LUCK-AT-LAST

INSPIRED-ET: Inspired is a bull that really needs no introduction, and we're increasingly confident he'll live up to his name.

Sired by the bull who this year hit a million straws, San Ray Beamer, and out of a Lynbrook Terrific dam, we expected good udders and dairy conformation coupled with great BW; Inspired delivers just that.

Bred by Graham & Maureen Shaw, who used to farm in the beautiful Cambridge area, these breeders definitely had their 'luck at last' and



The dam of 517055 Taramont Springtide

deserve to be justly rewarded for their efforts.

Inspired continues to make an impact in the Forward Pack and is sure to put a smile on the faces of the farmers around the country who go on to milk his well-balanced and productive daughters.

517055 - TARAMONT SPRINGTIDE:

Another exciting bull selected for Forward Pack, Springtide offers bucket loads of solids and phenomenal udders (1.13) to carry his impressive production. Bred by Jim and Sue Webster of Waitara, Taranaki.

517001 - ARKANS PATRIARCH-ET:

Breeding this Kraakmians Jaydie son from their outstanding Arkans Priscilla-Mint Edition cow, Patriarch has been selected for the Daughter

Proven team, and LIC's sire selection team thanks Stewart and Kathryn Anderson for their heartfelt efforts. Being A1A2, Patriarch is in the Daughter Proven team, allowing farmers to access to superb genetics including udder traits of 1.05 BV, good fertility, and marvellous fat and protein BVs.

517060 - KEGZY REMARKABLE: Just like horses racing for a top spot so too does Remarkable, being pushed forward in the race by high solids 50kgs fat and 35kgs of protein, with superb udder BVs carrying through.

Hats off to Vaughan and Trudy Keegan from K & Z Family Trust for breeding this exceptional Drysdale Sovereign son, who's an integral part in holding the Forward Pack in such high esteem this year.

2020 Spring Holstein-Friesian Daughter Proven Team

Sire	gBW/Rel%	Sire	gBW/Rel%
116019	284/84	116122	284/84
115021	281/93	115107	281/93
115080	248/87	112032	248/87
114007	239/87	117084	239/87
116036	237/88	116078	237/88
115132	235/86	116114	235/86
117069	231/77	116001	231/77
117052	230/75	116108	230/75
115046	222/87	115023	222/87

WEIGHTED AVERAGES OF PREMIER SIRES - \$225/99%

Management	-0.5	0	0.5	1
Adapts to Milking	0.33			quickly
Shed Temperament	0.32			placid
Milking Speed	0.14			fast
Overall Opinion	0.42			desirable
Conformation	-0.5	0	0.5	1
Stature	0.54			tall
Capacity	0.39			capacious
Rump Angle	-0.11			sloping
Rump Width	0.32			wide
Legs	-0.05			curved
Udder Support	0.42			strong
Front Udder	0.37			strong
Rear Udder	0.23			high
FrontTeat Placement	0.14			close
Rear Teat Placement	0.18			close
Udder Overall	0.39			desirable
Dairy Conformation	0.44			desirable



Methane Efficiency
Nitrogen Efficiency



Methane Efficiency
Nitrogen Efficiency

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

Date 16/10/2020



Shaded bulls include daughter information

2020 Spring Holstein-Friesian Forward Pack Team

Sire	gBW/Rel%	Sire	gBW/Rel%
116019	284/84	117090	284/84
115021	281/93	119013	281/93
115080	248/87	118070	248/87
114007	239/87	119014	239/87
116036	237/88	118031	237/88
115132	235/86	118068	235/86
117038	335/73	119043	335/73
117068	334/77	118033	334/77
117051	273/75	119018	273/75

WEIGHTED AVERAGES OF PREMIER SIRES - \$255/98%

Management	-0.5	0	0.5	1
Adapts to Milking	0.34			quickly
Shed Temperament	0.31			placid
Milking Speed	0.17			fast
Overall Opinion	0.45			desirable
Conformation	-0.5	0	0.5	1
Stature	0.57			tall
Capacity	0.28			capacious
Rump Angle	-0.08			sloping
Rump Width	0.47			wide
Legs	-0.02			curved
Udder Support	0.47			strong
Front Udder	0.40			strong
Rear Udder	0.32			high
FrontTeat Placement	0.06			close
Rear Teat Placement	0.18			close
Udder Overall	0.43			desirable
Dairy Conformation	0.39			desirable



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Nitrogen Efficiency



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Shaded bulls include daughter information

2020 Spring Holstein-Friesian Daughter Proven Team

Sire	gBW/Rel%	Sire	gBW/Rel%
116019	284/84	116122	284/84
115021	281/93	115107	281/93
115080	248/87	112032	248/87
114007	239/87	117084	239/87
116036	237/88	116078	237/88
115132	235/86	116114	235/86
117069	231/77	116001	231/77
117052	230/75	116108	230/75
115046	222/87	115023	222/87

WEIGHTED AVERAGES OF PREMIER SIRES - \$225/99%

Management	-0.5	0	0.5	1
Adapts to Milking	0.33			quickly
Shed Temperament	0.32			placid
Milking Speed	0.14			fast
Overall Opinion	0.42			desirable
Conformation	-0.5	0	0.5	1
Stature	0.54			tall
Capacity	0.39			capacious
Rump Angle	-0.11			sloping
Rump Width	0.32			wide
Legs	-0.05			curved
Udder Support	0.42			strong
Front Udder	0.37			strong
Rear Udder	0.23			high
FrontTeat Placement	0.14			close
Rear Teat Placement	0.18			close
Udder Overall	0.39			desirable
Dairy Conformation	0.44			desirable



Methane Efficiency
Nitrogen Efficiency



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Date 16/10/2020



Shaded bulls include daughter information

2020 Spring Holstein-Friesian Daughter Proven Team

Sire	gBW/Rel%	Sire	gBW/Rel%
116019	284/84	116122	284/84
115021	281/93	115107	281/93
115080	248/87	112032	248/87
114007	239/87	117084	239/87
116036	237/88	116078	237/88
115132	235/86	116114	235/86
117069	231/77	116001	231/77
117052	230/75	116108	230/75
115046	222/87	115023	222/87

WEIGHTED AVERAGES OF PREMIER SIRES - \$225/99%

Management	-0.5	0	0.5	1
Adapts to Milking	0.33			quickly
Shed Temperament	0.32			placid
Milking Speed	0.14			fast
Overall Opinion	0.42			desirable
Conformation	-0.5	0	0.5	1
Stature	0.54			tall
Capacity	0.39			capacious
Rump Angle	-0.11			sloping
Rump Width	0.32			wide
Legs	-0.05			curved
Udder Support	0.42			strong
Front Udder	0.37			strong
Rear Udder	0.23			high
FrontTeat Placement	0.14			close
Rear Teat Placement	0.18			close
Udder Overall	0.39			desirable
Dairy Conformation	0.44			desirable



Methane Efficiency
Nitrogen Efficiency



Methane Efficiency
Nitrogen Efficiency

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Date 16/10/2020



Shaded bulls include daughter information

2020 Spring Holstein-Friesian Sexed Team (A2)

Sire	gBW/Rel%	Sire	gBW/Rel%
119048	254/54	118013	254/54
118053	252/59	119012	252/59
119081	225/59		
117088	224/74		
119030	220/57		
119019	214/61		
119064	214/60		
119033	212/62		
118049	210/57		
116076	210/83		

WEIGHTED AVERAGES OF PREMIER SIRES - \$222/96%

Management	-0.5	0	0.5	1
Adapts to Milking	0.35			quickly
Shed Temperament	0.34			placid
Milking Speed	0.11			fast
Overall Opinion	0.43			desirable
Conformation	-0.5	0	0.5	1
Stature	0.65			tall
Capacity	0.56			capacious
Rump Angle	-0.06			sloping
Rump Width	0.54			wide
Legs	0.01			curved
Udder Support	0.69			strong
Front Udder	0.63			strong
Rear Udder	0.50			high
FrontTeat Placement	0.38			close
Rear Teat Placement	0.52			close
Udder Overall	0.71			desirable
Dairy Conformation	0.61			desirable



Methane Efficiency
Nitrogen Efficiency



Methane Efficiency
Nitrogen Efficiency

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

Date 16/10/2020



Shaded bulls include daughter information

2020 Spring Holstein-Friesian A2A2 Team

Sire	gBW/Rel%	Sire	gBW/Rel%
118001	266/58	119034	266/58
119065	252/63	119016	252/63
119002	251/56	119097	251/56
118042	247/64	119010	247/64
118071	237/58		
118016	235/64		
117035	232/76		
119049	217/59		
119035	216/60		
118014	213/64		

WEIGHTED AVERAGES OF PREMIER SIRES - \$225/97%

Management	-0.5	0	0.5	1
Adapts to Milking	0.38			quickly
Shed Temperament	0.37			placid
Milking Speed	0.12			fast
Overall Opinion	0.46			desirable
Conformation	-0.5	0	0.5	1
Stature	0.55			tall
Capacity	0.43			capacious
Rump Angle	-0.15			sloping
Rump Width	0.48			wide
Legs	-0.05			curved
Udder Support	0.40			strong
Front Udder	0.35			strong
Rear Udder	0.27			high
FrontTeat Placement	0.18			close
Rear Teat Placement	0.24			close
Udder Overall	0.40			desirable
Dairy Conformation	0.44			desirable



Methane Efficiency
Nitrogen Efficiency



Methane Efficiency
Nitrogen Efficiency

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

Date 16/10/2020



Shaded bulls include daughter information



2020 Spring KiwiCross® Daughter Proven Team

Sire	gBW/Rel%	Sire	gBW/Rel%
516066	328/84	515017	LYNBROOK KARTELL
517060	326/74	515036	TANIWIHA HANDFORD ET
515025	303/86		
516074	303/86		
511011	296/99		
517001	296/78		
514017	294/87		
516070	278/84		
516025	267/87		
515068	263/85		

WEIGHTED AVERAGES OF PREMIER SIRES - \$295/99%

Management	-0.5	0	0.5	1
Adapts to Milking	0.32			quickly
Shed Temperament	0.30			placid
Milking Speed	0.16			fast
Overall Opinion	0.37			desirable
Conformation	-0.5	0	0.5	1
Stature	0.04			tall
Capacity	0.54			capacious
Rump Angle	-0.12			sloping
Rump Width	0.25			wide
Legs	0.05			curved
Udder Support	0.48			strong
Front Udder	0.49			strong
Rear Udder	0.45			high
Front Teat Placement	0.20			close
Rear Teat Placement	0.45			close
Udder Overall	0.52			desirable
Dairy Conformation	0.53			desirable

Date 16/10/2020



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

2020 Spring KiwiCross® Sexed Team (A2)

Sire	gBW/Rel%	Sire	gBW/Rel%
518038	322/62	518009	ARKANS BENSON-ET
519078	301/61	519049	CLOVERLEA TILSON
519023	297/55		
518076	292/57		
518017	290/64		
518063	283/60		
519019	283/61		
519005	279/54		
518029	274/61		
519073	268/55		

WEIGHTED AVERAGES OF PREMIER SIRES - \$288/96%

Management	-0.5	0	0.5	1
Adapts to Milking	0.34			quickly
Shed Temperament	0.33			placid
Milking Speed	0.07			fast
Overall Opinion	0.39			desirable
Conformation	-0.5	0	0.5	1
Stature	0.07			tall
Capacity	0.59			capacious
Rump Angle	-0.07			sloping
Rump Width	0.24			wide
Legs	0.06			curved
Udder Support	0.52			strong
Front Udder	0.45			strong
Rear Udder	0.54			high
Front Teat Placement	0.21			close
Rear Teat Placement	0.39			close
Udder Overall	0.57			desirable
Dairy Conformation	0.58			desirable

Date 16/10/2020



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

2020 Spring KiwiCross® Forward Pack Team (A2)

Sire	gBW/Rel%	Sire	gBW/Rel%
516066	328/84	518072	DEANS PROFESSIONAL
515025	303/86	518016	HORIZON ASCOTT
514017	294/87	519011	SANDERS ACCOLADE
511011	296/99	518056	JACKSONS BOCELLI
516074	303/86	518015	SMITHS HERALD
515068	263/85	518001	ARKANS BALMORAL
517043	389/75	519013	BUSY BROOK OUTLAW
517026	324/75	519038	SHEPHERDS RADAR
517055	295/76	519062	ARKANS BARRIER
517042	291/77	518061	INNOVATION HOMEBREW

WEIGHTED AVERAGES OF PREMIER SIRES - \$306/98%

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	0.37			desirable
Conformation	-0.5	0	0.5	1
Stature	-0.11			tall
Capacity	0.58			capacious
Rump Angle	-0.10			sloping
Rump Width	0.14			wide
Legs	0.06			curved
Udder Support	0.52			strong
Front Udder	0.49			strong
Rear Udder	0.52			high
Front Teat Placement	0.15			close
Rear Teat Placement	0.44			close
Udder Overall	0.55			desirable
Dairy Conformation	0.56			desirable

Date 16/10/2020



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

2020 Spring Jersey Daughter Proven Team

Sire	gBW/Rel%	Sire	gBW/Rel%
315008	331/88	314004	BELLS OIFLOYD S3J
313023	330/86	314039	FOXTON MANZ CLAYTON
316036	330/84	315009	RIVERVIEW AND DEXTER S2J
316009	327/86		
316039	326/84		
315045	320/87		
316051	317/84		
317036	306/75		
317025	305/76		
315029	305/92		

WEIGHTED AVERAGES OF PREMIER SIRES - \$313/99%

Management	-0.5	0	0.5	1
Adapts to Milking	0.22			quickly
Shed Temperament	0.22			placid
Milking Speed	0.14			fast
Overall Opinion	0.28			desirable
Conformation	-0.5	0	0.5	1
Stature	-0.77			tall
Capacity	0.44			capacious
Rump Angle	-0.10			sloping
Rump Width	-0.01			wide
Legs	0.09			curved
Udder Support	0.30			strong
Front Udder	0.46			strong
Rear Udder	0.60			high
Front Teat Placement	0.06			close
Rear Teat Placement	-0.17			close
Udder Overall	0.53			desirable
Dairy Conformation	0.43			desirable

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

Date 16/10/2020

HOOFPRINT®

Methane Efficiency
Nitrogen Efficiency



2020 Jersey Sexed Team (A2)

Sire	gBW/Rel%	Sire	gBW/Rel%
319037	334/60		
319008	323/60		
317041	309/76		
318036	308/59		
318034	308/62		
318018	304/60		

WEIGHTED AVERAGES OF PREMIER SIRES - \$313/95%

Management	-0.5	0	0.5	1
Adapts to Milking	0.24			quickly
Shed Temperament	0.25			placid
Milking Speed	0.18			fast
Overall Opinion	0.28			desirable
Conformation	-0.5	0	0.5	1
Stature	-0.83			tall
Capacity	0.47			capacious
Rump Angle	-0.22			sloping
Rump Width	-0.05			wide
Legs	0.08			curved
Udder Support	0.38			strong
Front Udder	0.48			strong
Rear Udder	0.60			high
Front Teat Placement	0.10			close
Rear Teat Placement	-0.04			close
Udder Overall	0.56			desirable
Dairy Conformation	0.41			desirable

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

Date 16/10/2020

HOOFPRINT®

Methane Efficiency
Nitrogen Efficiency



Jersey Forward Pack Team (A2)

Sire	gBW/Rel%	Sire	gBW/Rel%
315008	331/88	319020	GLENUJ GB LUCIAN
313023	330/86	319019	GLENUJ BT LIBERATION-ET
316009	327/86	318035	SHELBY BC LOTTO ET S3J
315045	320/87	319003	BAILEY LW DETECTIVE -ET
317023	418/79	318002	OKURA COYOTE LENNOX S3J
317006	316/75	318012	LYNBROOK KING QUADRANT
317034	313/75	319015	COOMBES SF FEEFI-ET S3J
318021	351/61		
319009	346/60		
318009	341/63		

WEIGHTED AVERAGES OF PREMIER SIRES - \$327/98%

Management	-0.5	0	0.5	1
Adapts to Milking	0.23			quickly
Shed Temperament	0.34			placid
Milking Speed	0.24			fast
Overall Opinion	0.38			desirable
Conformation	-0.5	0	0.5	1
Stature	-0.75			tall
Capacity	0.45			capacious
Rump Angle	-0.06			sloping
Rump Width	-0.06			wide
Legs	0.08			curved
Udder Support	0.29			strong
Front Udder	0.33			strong
Rear Udder	0.50			high
Front Teat Placement	0.06			close
Rear Teat Placement	-0.11			close
Udder Overall	0.45			desirable
Dairy Conformation	0.43			desirable

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

Date 16/10/2020

HOOFPRINT®

Methane Efficiency
Nitrogen Efficiency



117090 Tronnoco MH Samba -ET S3F



Sire of 117090 Samba

Breeding Details

Breeder	T & K O'Connor	Dam	Tronnoco Maxi Sancha
Sire	Mourne Grove Hothouse S2F	MGS	Woodcote TF Maximiser

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
56 kg	44 kg	1346 l	34 kg	-0.9 %
3.9%	4.4 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
348 days	0.12	2.7 / 32%	4.0 / 72%	0.00

INDIVIDUAL PRICE	\$31.75 +GST	SPRING PACK FROM	\$23.36* +GST
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*If 10% InvestaMate discount applies

gBW/Rel \$238/76%

TOP Traits 77 Daughters 40 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.17				
Shed Temperament	0.13				
Milking Speed	-0.13				
Overall Opinion	0.22				
Stature	0.69				
Capacity	0.24				
Rump Angle	-0.12				
Rump Width	0.22				
Legs	-0.14				
Udder Support	0.61				
Front Udder	0.90				
Rear Udder	0.40				
Front Teat Placement	0.45				
Rear Teat Placement	-0.07				
Udder Overall	0.81				
Dairy Conformation	0.35				

A2 Protein	A2A2	TOP Daughters	33
Gestation Length	-1.5 Days	OAD	1306

Holstein-Friesian F16
Registered Pedigree (Supplementary)

Evaluation Date:
16/10/2020

117051 Busy Brook SB Fortune S2F



Six-year-old dam. Owner: Busy Brook Holsteins, Oamaru

Breeding Details

Breeder	N & A Bayne	Dam	Busy Brook Mill Fay S2F
Sire	San Ray FM Beamer-ET S2F	MGS	Gordons PF Millenium S1F

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
31 kg	40 kg	357 l	6 kg	2.3 %
4.1%	5.2 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
379 days	0.24	1.0 / 88%	1.4 / 33%	0.05

INDIVIDUAL PRICE	\$31.75 +GST	SPRING PACK FROM	\$23.36* +GST
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*If 10% InvestaMate discount applies

gBW/Rel \$273/75%

TOP Traits 96 Daughters 39 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.06				
Shed Temperament	0.03				
Milking Speed	0.44				
Overall Opinion	0.25				
Stature	0.30				
Capacity	0.20				
Rump Angle	0.54				
Rump Width	0.69				
Legs	0.08				
Udder Support	0.49				
Front Udder	0.32				
Rear Udder	0.55				
Front Teat Placement	0.23				
Rear Teat Placement	0.43				
Udder Overall	0.53				
Dairy Conformation	0.27				

A2 Protein	A1A2	TOP Daughters	19
Gestation Length	-3.8 Days	OAD	1291

Holstein-Friesian F15J1
Registered Pedigree (Supplementary)

Evaluation Date:
16/10/2020

117038 Tanglewood GL Hardy



Sire of 117038 Hardy

Breeding Details

Breeder	M & N Hawkings	Dam	Tanglewood Blitz Rain
Sire	Gordons AM Lancelot S3F	MGS	Greenwell TF Blitz-ET S3F

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
45 kg	52 kg	664 l	13 kg	1.6 %
4.2%	5.1 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
414 days	0.11	1.8 / 26%	1.1 / 68%	-0.04

INDIVIDUAL PRICE	\$31.75 +GST	SPRING PACK FROM	\$23.36* +GST
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*If 10% InvestaMate discount applies

gBW/Rel \$335/73%

TOP Traits 66 Daughters 30 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.39				
Shed Temperament	0.36				
Milking Speed	0.16				
Overall Opinion	0.32				
Stature	0.58				
Capacity	0.09				
Rump Angle	-0.31				
Rump Width	0.50				
Legs	0.02				
Udder Support	0.60				
Front Udder	0.32				
Rear Udder	0.47				
Front Teat Placement	-0.31				
Rear Teat Placement	0.36				
Udder Overall	0.36				
Dairy Conformation	0.40				

A2 Protein	A1A2	TOP Daughters	33
Gestation Length	-3.8 Days	OAD	1360

Holstein-Friesian F16
Registered Pedigree

Evaluation Date:
16/10/2020

317023 Shepherds LT Flint ET S3J



317023 Shepherds LT Flint ET S3J - one year old

Breeding Details

Breeder	R Shepherd	Dam	Shepherds Francesca S2J
Sire	Lynbrook Terrific ET S3J	MGS	Okura Lika Murmur S3J

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
30 kg	54 kg	70 l	-31 kg	-0.2 %
4.4 %	5.8 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
532 days	0.04	-1.4 / 80%	0.0 / 89%	0.16

INDIVIDUAL PRICE	\$31.75 +GST	SPRING PACK FROM	\$23.36* +GST
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*If 10% InvestaMate discount applies

gBW/Rel \$418/79%

TOP Traits 129 Daughters 63 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.47				
Shed Temperament	0.51				
Milking Speed	0.30				
Overall Opinion	0.59				
Stature	-0.58				
Capacity	0.51				
Rump Angle	0.24				
Rump Width	0.00				
Legs	0.19				
Udder Support	0.57				
Front Udder	0.34				
Rear Udder	0.82				
Front Teat Placement	0.18				
Rear Teat Placement	0.31				
Udder Overall	0.69				
Dairy Conformation	0.58				

A2 Protein	A2A2	TOP Daughters	47
Gestation Length	1.6 Days	OAD	1404

Jersey J16
Registered Jersey (Supplementary)

Evaluation Date:
16/10/2020

517043 Glen Koru Proclaimer-ET



517043 - Glen Koru Proclaimer-ET

Breeding Details

Breeder	D & K Camp	Dam	Glen Koru Flo ET
Sire	Gydeland Excel Inca S3F	MGS	Nevron Showman

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
38 kg	57 kg	577 l	-2 kg	2.7 %
4.1 %	5.3 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
519 days	-0.07	1.0 / 68%	0.2 / 90%	0.18

INDIVIDUAL PRICE **\$31.75** +GST
 SPRING PACK FROM **\$23.36*** +GST

*If 10% InvestaMate discount applies

gBW/Rel **\$389/75%**

TOP Traits 93 Daughters 34 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.11				
Shed Temperament	0.12				
Milking Speed	-0.09				
Overall Opinion	0.17				
Stature	-0.25				
Capacity	0.47				
Rump Angle	0.26				
Rump Width	-0.06				
Legs	0.01				
Udder Support	0.35				
Front Udder	0.20				
Rear Udder	0.37				
Front Teat Placement	0.01				
Rear Teat Placement	0.26				
Udder Overall	0.35				
Dairy Conformation	0.38				

A2 Protein	A2A2	TOP Daughters	10
Gestation Length	2.1 Days	OAD	1368

KiwiCross® F11J5

Evaluation Date: 16/10/2020



517001 Arkans Patriarch-ET



Six-year-old dam. Owner: S & K Anderson, Otorohanga

Breeding Details

Breeder	S & K Anderson	Dam	Arkans Priscilla
Sire	Kraakmans Jaydie	MGS	Fairmont Mint-Edition

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
16 kg	38 kg	-469 l	-13 kg	3.4 %
4.2 %	5.6 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
541 days	0.22	-0.9 / 81%	-0.9 / 85%	0.09

INDIVIDUAL PRICE **\$31.75** +GST
 SPRING PACK FROM **\$23.36*** +GST

*If 10% InvestaMate discount applies

gBW/Rel **\$296/78%**

TOP Traits 145 Daughters 62 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.09				
Shed Temperament	0.07				
Milking Speed	0.31				
Overall Opinion	0.27				
Stature	-0.19				
Capacity	0.33				
Rump Angle	-0.20				
Rump Width	0.18				
Legs	-0.04				
Udder Support	0.88				
Front Udder	1.02				
Rear Udder	1.12				
Front Teat Placement	0.15				
Rear Teat Placement	0.57				
Udder Overall	1.05				
Dairy Conformation	0.48				

A2 Protein	A1A2	TOP Daughters	34
Gestation Length	-4.1 Days	OAD	1289

KiwiCross® F10J6

Evaluation Date: 16/10/2020



517055 Taramont Springtide



Three-year-old dam. Owner: Waiau Trust, Waitara

Breeding Details

Breeder	J & S Webster	Dam	Taramont Riley Spring
Sire	Drysdale Sovereign	MGS	Burwells Riley

Production gBVs

Protein	Milkfat	Milk	Liveweight	Fertility
47 kg	55 kg	960 l	34 kg	-1.1 %
4.0 %	4.9 %			

Total Longevity	Somatic Cell Count	Heifer Calving Difficulty	Cow Calving Difficulty	Body Condition
384 days	0.20	0.0 / 41%	-1.0 / 73%	0.10

INDIVIDUAL PRICE **\$31.75** +GST
 SPRING PACK FROM **\$23.36*** +GST

*If 10% InvestaMate discount applies

gBW/Rel **\$295/76%**

TOP Traits 89 Daughters 37 Herds

Management	BV	-0.5	0	0.5	1.0
Adapts to Milking	0.38				
Shed Temperament	0.41				
Milking Speed	0.25				
Overall Opinion	0.49				
Stature	0.31				
Capacity	1.02				
Rump Angle	-0.23				
Rump Width	0.56				
Legs	0.08				
Udder Support	1.29				
Front Udder	0.86				
Rear Udder	0.88				
Front Teat Placement	0.49				
Rear Teat Placement	1.26				
Udder Overall	1.13				
Dairy Conformation	1.13				

A2 Protein	A2A2	TOP Daughters	35
Gestation Length	-9.9 Days	OAD	1400

KiwiCross® F10J6

Evaluation Date: 16/10/2020





SPECKLE PARK MAKING ITS MARK

Here, we profile a new breed of beef that's strutting its way onto the New Zealand dairy scene, with its striking coat turning plenty of heads.

Mark McKenzie took a big risk when he brought the Speckle Park cattle breed to New Zealand a little more than a decade ago.

"We knew the breed went well in Canada, and we knew it had also gone well in Australia, but they were grain-fed animals which thrived in completely different conditions" Mark says.

"We didn't know how it would go on pasture, but we had a good feeling about it."

That feeling was perhaps borne from observations the breed was incredibly hardy.

In Canada, where temperatures can get as low as -40 degC, Speckle Park cattle were proven performers.

And in Australia, where temperatures can get as high as +40 degC, again the cattle were proven performers.

Climate wasn't going to be a factor, Mark says; "they have very thick hides on them."

"So bringing it here, to breed and grow on a pure pasture diet, on what is hilly, rolling, country, was a relatively new venture for the stud, but it's been a hell of a journey," Mark says.

The DAIRY Factor

Mark and his wife Melissa, together with their son Jack, 20, and Molly, 17 are the fifth-generation McKenzie family to run Maungahina Stud near Masterton.

It's at Maungahina that sheep and commercial cattle are raised alongside Maungahina Hereford and Speckle Park bulls (for annual private auction).

"In grass-fed beef, we have such a great product here in New Zealand, and we've found these cattle marble well on grass," Mark says of the Speckle Park breed.

"Initially we brought them in to just try, but the business has just skyrocketed and it now represents an important income stream for us.

"The dairy industry has been a massive success factor, with the interest in the breed really taking off."

When the stud first turned to supplying the dairy industry it sold about 200 straws. Today, more than 30,000 Speckle Park straws are supplied to dairy farmers per year through the exclusive arrangement with LIC during a season.

"In my local area I drive down the road and see Speckle on every second dairy farm I come across. Five years ago there were only one or two farms where you'd see that throughout all of New Zealand. Obviously the word has got out."

WHAT'S THE APPEAL?

Dairy farmers have seen their striking colour, Mark says.

"That's a big advantage, people love that, but they're also impressed by their lower birth weight, and they're very vigorous at birth so their survivability on the hill country is incredible.



Mark with one of the farm's Speckle Park bulls

"When they're born they get up on their feet so quickly to get a drink, most within about minute. For the rearers that's important, they're so quick to get on to the feeders to suckle.

"At weaning, their weights are ahead of other breeds by 20-30 kgs," Mark says, "which shows if we pick them right they're great converters of feed. And we know what genetics work and what won't."

GENETIC DIFFERENTIATION

The myostatin gene carried by some of the bulls was a great point of difference too, Mark says.

"We test for it, and we want to breed from this gene. If we select for this we'll get high yield, high carcass, early-maturing cattle."

"In 18-20 months, they'll be off the grass, off to kill, meaning the farmer doesn't have to carry it for another winter. This is what this breed does.

They are high-yielding cattle, so they'll provide more bang for buck than most other breeds."

Mark says the grain diet of Australia and Canada might give the meat tenderness, but New Zealand's pasture diet provides incredible taste.

"With the myostatin gene they carry, the meat is so much softer than any other breed, that's the feedback we're getting from butchers. It's a hell of a meat animal. They're marbling incredibly well and crossing very well over a dairy animal, and are delicious to eat. I know several butchers who are going specifically after dairy-cross Speckle animals. They're mad about it, that's how good they are."

Mark says New Zealand's conditions mean his stud has been particularly strict on the Speckle Park cattle's structure. "That comes down to the skeleton of the animal - they've got to be able



The McKenzie family - Jack, Mark, Melissa, and Molly

to walk on hills, perform like any other beef breed, so our culling-out rate has been huge just to get the right-structured animals for our conditions."

"But it's exciting times as a stud because there's a lot more numbers," Mark says, "and we know a lot more about the cattle, and I believe it's only going to get better and stronger. We're investing in embryo technology, and have put in more than 1000 of them over the last decade, and will continue to do so. The partnership with LIC has been mutually beneficial.

"For a while now we've concentrated on meat and structure, but focus will soon turn to gestation length, that's our next stage, and we want more consistency with the breed."

Maungahina Stud

- Maungahina consists of three properties: Maungahina, 600ha rolling hilly lime stone country 8km east of Masterton; Papariki 50ha, east of Masterton all under k-line irrigation, and; Miki Miki, 220ha, 18km north-west of Masterton.
- 400 registered cows consisting of Hereford and Speckle Park; wintering 1000 stud cattle (all performance recorded); 800 commercial ewes.
- Stud stock are treated as any commercial operator would: "From a commercial breeders viewpoint they need to be good producers, fertile, sound and durable."
- In this year's Queen's Birthday honours, Mark's father, Bruce McKenzie, was made a Companion of the New Zealand Order of Merit for services to the cattle industry.

TOO BUSY TO HERD TEST IN OCTOBER ... ALL OTHER NINE TIMES JUST FINE!

Big on herd testing - Waikato breeder and commercial dairy operator Brad Payne carries out herd testing nine times a season

Cambridge dairy farmer and breeder Brad Payne would herd test 10 times a year, but he works as an LIC AB Technician during October so reluctantly sacrifices the data he'd get during that month of the year.

And while he accepts that herd testing four times a year is standard practice - Brad admits he's no ordinary farmer and does things "a bit differently."

He copes fine with his nine, as opposed to 10, herd tests annually, he says.

"For me, it's all about data and the insights it provides," Brad says.

"Herd testing is crucial to any farmer, without a herd test you have nothing to go on.

"Just look at any business, like banks for example: Now they do budgets and audits on their financial positions all the time. It's just a way of doing basic checks and balances and making sure nothing is amiss.

"Farmers are no different - to me the herd test is a basic, regular, audit. I need to see the profitability and health status of each cow. Each cow is a profit centre; some profit centres will perform and make me money, but I need to identify and weed-out the ones that don't."

Given the state of his herd, it's hard to argue with Brad's strategy of constant measuring and monitoring: His herd's breeding worth and production worth (BW & PW) are ranked in the top-2% and top-1% respectively of the national milking herd (i.e. all herd-testing herds that milk a minimum of 50 tagged cows).

A system four farm, Brad's 750-strong milking herd is 25% Jersey, 25% Friesian, and 50% KiwiCross cows.

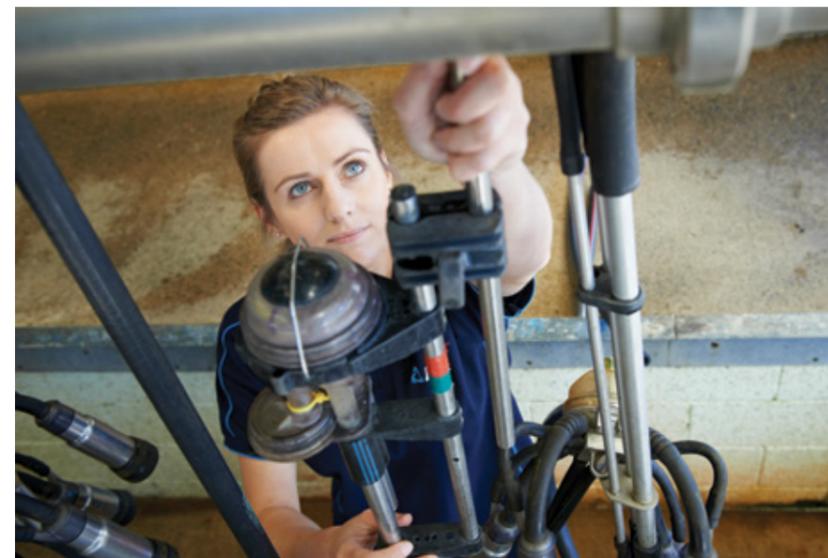
Even in a low payout or drought year, Brad's advice to fellow farmers is to avoid cutting the herd test from the budget; rather, it should be thought of as a non-discretionary investment, he says.

"During a low payout if you're saying no to even a single herd test, well that's a year's worth of figures you've lost. I know that all people don't sell or do the breeding thing, but if I was that sort of farmer who was without a single test, I'd have no idea of what's going on."

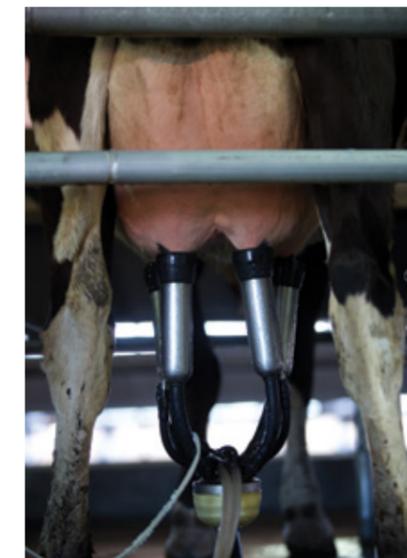
While parentage information is useful, it's not enough, Brad says.

"Her parentage might be good, but she could perform a long way from what the parent average is, because that's nature. Parentage information, even genomic information, reduces risk - but I still put a lot of emphasis on the first herd test.

As a breeder, Brad uses his herd test information late-June and September to identify young cows for embryo transfer work. "If the genomics says they're good and the early herd test information says they're good, I'm happy. The herd test serves as good confirmation of decisions we make."



Herd Testing provides powerful insights about individual cow health and performance in a farmer's herd



Use the first test to monitor heifer performance

Because the farm also does all-AB, it consistently has surplus heifer calves, and herd test information provides Brad with information on, for example, month-old calves: "So when I'm in a position to sell some, I'm always selling off my bottom-end," he says.

The January herd test samples double as a test for Johne's disease information, data that feeds in to the farm's 10-year Johne's control plan.

As a commercial farmer, Brad says herd testing is crucial in monitoring somatic cell counts, helps dictate mating decisions, helps decide on culls as possible feed pinches emerge, and heavily influences which surplus cows to sell (should there be a high number of replacement stock).

But the herd test is also a way of knowing which cows are delivering 'honest' milk:

"The milk docket gives you your herd average, but the herd test tells you who your really good cows are, and who aren't."

At the end of the season, herd test information is used for dry-off decisions, with days-in-milk and production worth balanced against the health and wellbeing status of the cow, and individuals picked out for targeted dry cow treatment.

Four Herd Tests Provide Information On

1st Test

- Monitor heifer performance
- Identify and manage high SCC cows at the start of lactation
- Fine-tune breeding decisions
- Capture the first 60 days in milk
- BVD - PI Hunt
- *Staph. aureus* testing

2nd Test

- Identify pre-Christmas culls
- Monitor SCC per cow
- *Staph. aureus* testing
- Monitor mid-lactation production

3rd Test

- Consider early dry-offs and redirect feed to top producers
- Identify end of season culls
- Monitor SCC per cow
- Use for targeting dry cow treatments
- Johne's testing
- Milk Pregnancy testing

4th Test

- Monitor SCC per cow
- Use for drying off cows
- Use for targeting dry cow treatments
- Complete the picture with end of lactation information
- Identify end of season production culls
- Late season Milk Pregnancy test - identify empties before winter
- *Staph. aureus* testing



Gemma Worth, LIC research assistant, left, with Lorna McNaughton

CAN LOW-METHANE BULLS BE BRED?

by Lorna McNaughton, LIC reproduction scientist

The New Zealand Government has a stated commitment to reducing gross methane emissions by 10% (relative to 2017-levels) by 2030, and by 24-47% by 2050.

This signals significant change for the agriculture industry, and more specifically, the dairy sector – which, according to the Ministry for the Environment, account for 48% and 22.9% respectively of all greenhouse gas emissions in New Zealand (mostly in the form of methane, although a small portion is in the form of nitrous oxide).

Ruminant livestock emit methane, mostly through burps, as part of the digestion process and the amount produced depends on how much feed is eaten and what type.

It's estimated dairy bulls burp every 90-120 seconds, so reducing this 'gassy' emission is a focus for many New Zealand breeding companies, including LIC.

Breeding is one tool that could be used to help dairy farmers reduce emissions on their farms.

Methane emissions have been shown to be heritable (0.10 to 0.20), a necessary step on the pathway to develop a breeding value. The degree of heritability is similar to that of somatic cell score (0.15), but lower than milk traits (0.31 to 0.36).

A joint project between LIC and CRV, funded by the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC), aims to measure methane from dairy bulls entering the sire proving schemes of both breeding companies.

A significant trial is now taking place, part of it at LIC's Chudleigh Farm at Tauwhare, east of Hamilton.

The project's first stage was to design and develop methods that enabled the emissions of 300 to 350 bulls to be measured each year.

To do this, a single pen was set up with a Greenfeed machine to measure methane, and feed bins allowed each bull's intake to be measured.

Selection of feed type was important. The low dry matter

of pasture, or pasture-silage, together with variations in quality meant that alternative feeds needed to be identified.

Lucerne hay cubes were selected because they were a forage high in dry matter. This also meant bulls only needed their feed bins topped up once or twice per day, with quality relatively consistent from year-to-year.

A small quantity of pelleted feed was available in the Greenfeed machine to entice the bulls to visit the machine.

When bulls initially put their head in the machine, pellets 'dropped', and kept dropping at specified intervals, to keep the bull's head in the machine for at least two minutes.

Air was then sucked into the Greenfeed machine to ensure all of the bull's breath was captured, with sub-samples analysed for methane.

The bulls were allowed to visit the Greenfeed up to five times a day. The diagram at the bottom of p30 shows the key parts of the Greenfeed machine.

Two pilot trials took place at both LIC's Chudleigh Farm and at a CRV property.

After minor adjustments of methods and practice in using the machines, both LIC and CRV are confident that the planned trial design will work.

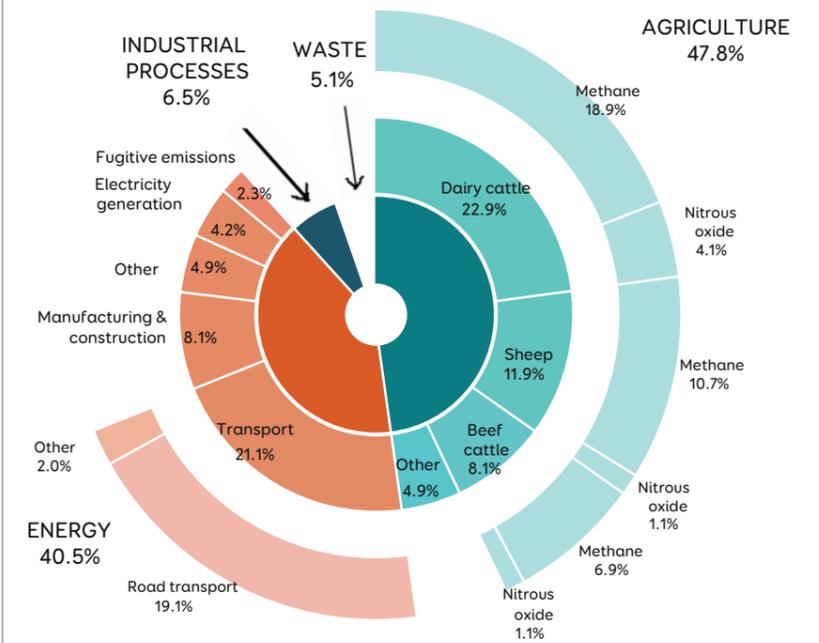
A full trial is now being planned, and will kick off in February 2021 at LIC and June 2021 at CRV.

Preliminary breeding values are expected after one year, although three years of data will be needed to estimate breeding values with a suitable degree confidence.

Genetic improvement is a slow game, but the process has begun, and the rewards are potentially significant for both farmers and New Zealand in general.

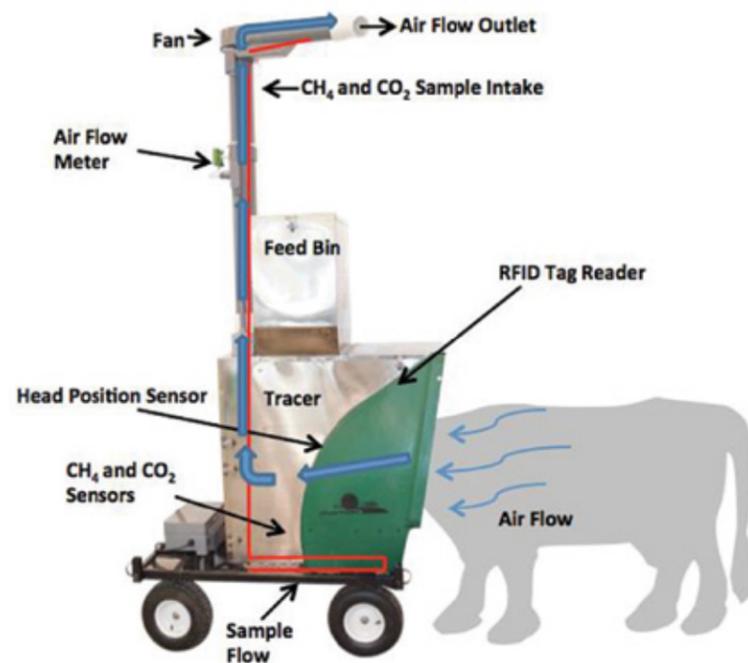
NEW ZEALAND'S Greenhouse Gas Emissions

Source: New Zealand's Greenhouse Gas Inventory 1990-2018, published April 2020



Note: Percentages in the graph may not add up to 100 due to rounding.

Fugitive emissions are from the leakage, burning and controlled release of gases in oil and gas operations as well as escaping gases from coal mining and geothermal operations. Agricultural methane is mainly from livestock digestive systems and nitrous oxide is mainly from manure on soil. Emissions from Tokelau are not represented on this graph as they are 0.005% of New Zealand's gross emissions.



Trial barn set-up at LIC's Chudleigh Farm

A SEASON OF CHANGE



by Edward Hardie - LIC
National FarmWise Manager

In August I attended a New Zealand Institute of Primary Industry Management (NZIPIM) one-day conference, where one slide in particular caught my attention:

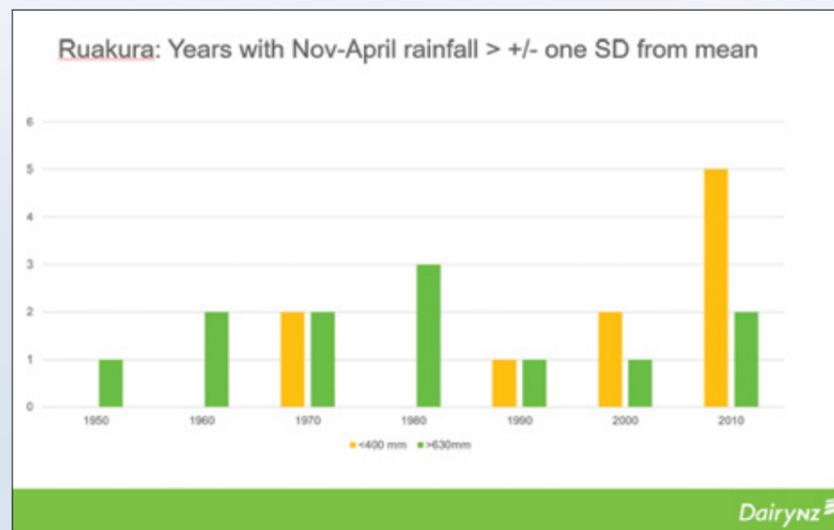
The last 10 years of rainfall data shows that, for the period November to April, New Zealand has had seven instances (years) that were outside one-standard-deviation of the mean - this took into account the past 60-plus years of data.

In a wider context, of the last 66 years, there were 22 years that were beyond (i.e. more extreme) one-standard-deviation of the normal weather pattern. Remember, of those 22 instances, seven were in the last 10 years. During the past decade, five years have had much drier conditions than normal, and two years have experienced much wetter conditions than normal.

The above serves to only reinforce the notion (for Ruakura Research Farm, at least) that weather patterns are changing from traditional, longer term norms; we're getting greater variability and extremes of rainfall, and the trend is toward much more drought-prone seasons.

With these changes in weather patterns we're seeing some farmers trialling different farming practices and plant species to combat the emerging weather extremes. Plant agronomists are also trialling and proof-testing various pastures species for drought resistance.

This year, I'm trialling deeper-rooted plants on some of my Northland dairy farm paddocks; a more drought resistant Red Clover (Morrow), some additional tap rooted crops including Chicory and a newer one called Pallaton Raphno, to complement my usual turnip crop (NB: these are merely a selection I'm trialling to see what may work best; I'm not endorsing any of these). I'll let you know after summer how it went.



Courtesy of NZIPIM Waikato Forum presentation 27 August 2020 - Rainfall and Pasture Growth Trends - Are conditions for pasture growth changing over time? By Chris Glassey, DairyNZ

POST AB: WHAT NOW?

As we come out of the AB mating period it is important that you:

- Rotate and keep track of your bull health to ensure they tail the late-cyclers well.
- Monitor your post-peak milk production decline; take advice or action if sudden drops are being experienced. The maintenance of good-quality feed intake will help elongate and slow the daily production decline.
- Continue to review your pasture quality and ensure seed head emergence is kept under control. Where appropriate, ensure paddocks are skipped and turned into silage so lactating cows are fed the best grass on farm every day.
- Review your combined feed demand for the rest of the season. Coming out of winter and spring, do you have:
 - (i) expected pasture levels;
 - (ii) crops in the ground, and;
 - (iii) supplements, including those stockpiled and contracted.

Be realistic - do you have enough to cover a tough summer? What

actions, including dry-off, may you need to take, and what are the trigger points? Understand your system and know when you should act to optimise your resources. For self-help on setting up a summer plan, use, for example, DairyNZ's summer management plan (<https://www.dairynz.co.nz/media/5788718/summer-management-plan-dairynz.pdf>)

- Take time to review how calving went. Seriously consider what factors/decisions/tasks worked well, and what would you do differently next year.
- Assess your mating performance. Check out your InCalf Fertility Focus Report in MINDA for good clues on performance and potential issues. Compare your performance to industry norms, including the six week in-calf rate and herd reproductive performance.
- Use herd test data and the body condition score (BCS) of your animals to check they are at optimum condition and performance for efficient milk production. Weigh your young stock monthly or bi-monthly, and enter the data into MINDA to check how the animals are progressing against desirable growth rates. Beware of animal heat stress and what mitigations you're able to use.

- Consider when you might change your milking frequency. There is some good information on this that's freely available, including on the LIC website <https://www.lic.co.nz/news/how-few-can-we-do-evolution-flexible-milking-frequency/>
- Finally, post-mating is the time to start thinking about next season staff arrangements. Will the current agreements and people be part of the team next year? Any gaps, replacements, or changes required? Discuss, identify, and confirm early so recruitment plans can be started prior to Christmas.

Review, plan, and monitor: This will provide a good basis to respond and adjust the farming system to the ever-changing environment.

When you need support, ask a qualified rural professional; they are there to help make your business successful. Good robust plans and scenario analyses will always set you up better than just going along as "per normal" (remember, 7 out of the last 10 years haven't been normal!).

To get in-touch with Edward or any of his team of FarmWise consultants, to either help review your operations or support your business, go to <https://www.lic.co.nz/products-and-services/farmwise-consultancy/>





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