



THE BULLETIN

It's time to look forward

SPRING 2017



Forward Thinking

Welcome everyone to my first editorial for The Bulletin.

Spring is an exciting time for both farmers and the artificial breeding industry, as we watch bulls coming through with their new proofs. It was this way 26 years ago when I started with LIC in the Livestock Selection team, and it is just as exciting now as I lead the Biological Systems team.

I have been actively watching the new bulls coming through, with the difference now being that the new graduates are eligible to come into the Forward Pack team as they get their early information.

It has been gratifying to see the increased uptake of Forward Pack through the sales season. One of my roles while in Research & Development (R&D) was the implementation of genomics.

Since 2008, one could say it certainly has been an up-and-down experience and now we are in another 'up phase'. We are seeing the bulls, on average, maintaining their proofs when they go from genomic information to daughter proven. This has given LIC confidence right across our various teams, and farmers are now purchasing Forward Pack with renewed confidence.

Over the coming months our R&D team will continue to develop and refine the methodology for estimating genomic merit. This will be first used as we purchase bulls in the coming summer period and, all going well, will also be implemented in MINDA next year.

Mycoplasma bovis (M.bovis) has been commanding a lot of our time over the

past few months. It appears now that MPI, through extensive testing (using LIC's Diagnostics Lab), have yet to find any infected herds outside the initial herds or with a direct link. This is very promising and increases the likelihood that New Zealand can eradicate this disease.

LIC has very strict quarantine protocols on its farm and also has a farm veterinarian who, with our bull farm staff, has been very hands-on in monitoring the bulls' health. While we are very confident that our bull team is clear of M.bovis, we have taken the extra step to test our bulls to 'dot the last i and cross the last t'. The diagnostic testing for M.bovis is for LIC-owned bulls that we are using in our Premier Sires and Alpha teams. Our Wagyu and Short Gestation teams are also being tested.

Earlier this year, LIC undertook a roadshow across the country, talking to many farmers about herd improvement. Through this time, we discussed mating the highest-BW cows in the herd to elite dairy sires to retain replacements from and then mating the lower-BW animals to non-replacement options.

Sexed semen has the potential to further increase the number of replacements from your top cows, and this season we are undertaking a sexed semen trial. In the past, frozen sexed semen has delivered a 15-20% drop in conception rate. Improvements in the technology over the past four years or so has caught LIC's attention, and we are now testing to see how much the technology has improved. These results



Richard Spelman
LIC chief scientist

will become available in the very early part of 2018. If the conception rates are acceptable this will allow us to offer a new sexed semen product in 2018.

Traditionally, LIC has primarily used liquid sexed semen (which has delivered very good conception rates at approximately 5% below conventional semen), but has been restricted to bulls that aren't in the Premier Sires team. If the frozen sexed semen trial is successful it will allow the elite LIC bulls to be used in frozen sexed semen product, fingers crossed! This will allow even more selection pressure within your dairy herd in generating your replacement heifers.

Meanwhile, we are continuing to extend your breeding options for the lower-BW cows that you don't want to keep replacements from. This year we have introduced Wagyu with First Light Foods, which has given farmers another option to increase their revenue from the cows they do not want replacements from. In addition, we continue to offer short gestation products in the form of short gestation Hereford and short gestation Dairy. We are continuing to explore other options in the beef area to continue to improve farmer profitability and prosperity.

I hope you enjoy reading this issue of *The Bulletin* and take time to consider the options you have through this upcoming mating season. In wetter parts of the country, we hope the rain comes to an end soon, that cows start or continue to cycle strongly, and that you get the opportunity to use some of the excellent options LIC has to offer.

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Greg and Gail Mitchell at the back of their High Rd farm.

Better Breeding Dishes Dividends

Twenty years ago, Greg and Gail Mitchell packed in their respective fulltime jobs as butcher and nurse and went low-order sharemilking in Waikite Valley, near Rotorua.

Today, the couple are owner-operators of two Patoka (Hawke's Bay) farms that are set to produce about 1 million kilograms of milk solids (kg/MS) this season.

Elevated about 350m above sea level, their farms receive good rainfall across what is, in parts at least, rolling to steep terrain.

Operating at system 3, the Mitchells try to keep farm working expenses at no more than \$3.50/kg/MS.

Their success to date may be obvious, but the Mitchells say it's the result of

a combination of factors, not least of which is hard work, the courage to take on new opportunity, and a consistency of approach in breeding a cow suitable to the kind of terrain they like to farm.

"Previously we've either sharemilked or owned dairy farms for long stints at both Atiamuri (north of Taupo) and Waikite Valley (near Rotorua)," Gail says.

"We made two main observations in our very first year as 50-50 milkers. It was a drought year, and we were sitting at the kitchen table and the cows being milked were black, smaller-framed girls, while the girls in the dried off mob were great big Friesians.

"The other observation we made was that the farm was quite hilly; the big black & whites stayed at the bottom,

and the black girls went right to the top and ate all the grass up there ... they also had a healthy body weight, and we decided that was the cow we wanted."

Greg adds that one of the key drivers of their success over the years has been their breeding philosophy and approach to reproduction.

"We go for a mid-size to smaller KiwiCross cow on the farms. The walks can be quite long, and the smaller cows tend to hold their body weight, so we aim to minimise health problems or lameness issues. They get back in calf and they do the production (the Mitchells aim for 400 MS/cow)."

When it comes to reproduction, Greg and Gail target at least a 25% replacement rate, another practice

Greg & Gail Mitchell, Patoka

Two farms:

- **High Rd**, purchased 2013 – 520 ha, milking 1600 mainly KiwiCross cows that are targeted to do 600,000 kg/MS (previously operated as system 5, milking 2500 cows for 630,000 kg/MS).
- **Kaweka**, purchased 2016 – 340 ha, milking 800 mainly KiwiCross cows that are targeted to do 'high 300,000s' in kg/MS.

560 rising two-year-olds across both farms (to be mated)

600 rising one-year-olds across both farms: Young stock are grazed at a neighbouring property and regularly weighed (MINDA Weights)

Premier Sires for six weeks; LIC short gestation length semen for three weeks; natural mate bull for three weeks.

25% replacement rate

Bottom 10% and 20% of herd (across the two farms respectively) go to Hereford semen.



Greg says his Protrack system is a key tool year-round, particularly during mating

they've been consistent with since the early years.

"What we've also done for the last 20 years is something LIC has been talking a lot about recently, and that's to deliberately put our bottom-end cows to non-replacement semen," Greg says.

This mating season, the Mitchells are doing six weeks Premier Sires, followed by three weeks short gestation length semen, and finishing off with a three-week stint with the natural-mate bull for peace-of-mind.

The key factor, Greg says, is that the bottom 10% of the home farm's herd goes to Hereford, and the bottom 20% of the Mitchell's other herd (on their second farm, Kaweka) goes to Hereford.

"We don't want to breed from our low-end cows – that way we can get rid of the poor genetics real quick. We're always mindful that it's not cheap getting a heifer to the shed, so we want to make sure it's a good one. Considering the grazing and rearing costs, if you've got a low-BW cow that gets through, it wouldn't even be worth [the cost of raising it] – you might as well have gone out and bought that replacement.

"On the Kaweka farm we purchased some really high-BW crossbred heifers, and to balance the price we bought

some average-recorded cows," Greg says. "That's why a lot of cows at Kaweka are going to Hereford; we're planning to introduce lots of young genetics through the rest of the herd to get things humming over the medium term."

Both farms have a 50-bail rotary equipped with Protrack Vantage, and Greg says this makes mating a relatively smooth operation. "We have 'days since last calved' in the criteria for the non-cyclers, and they get automatically drafted for CIDR'ing," Greg says.

"At mating time we set things up for 'days since last heat'. If she has paint rubbed off, the guys check them, punching in all cows on heat as they come in the shed. The system automatically drafts the animal in afternoon, and an alert automatically follows up to prompt the guys to re-paint the cow following the mating."

Greg and Gail say they like the simplicity and diversity that Premier Sires offer, but they say the value for money it leaves on farm is the biggest attraction.

"People talk about the cost of a straw of semen, but to me the price difference between a quality straw compared to cheaper straw might be, let's say, \$6. That means the heifer I get from the high-quality straw only has to do a single milk solid over its lifetime to pay for the difference. For us it's a no-brainer."

SGL & More Milk

by James Mills, Genetics product specialist



James Mills

Nearly 300,000 short gestation length semen inseminations were carried out by LIC on New Zealand farms last year.

And the impact of the above is significant, because those matings alone are set to generate an estimated \$12.6 million in extra milk revenue this spring.

Generating more milk in the vat, particularly at the start of the season when grass growth is optimal and cows naturally want to produce, is clearly among the key benefits of short gestation length (SGL) semen during spring.

The surge in popularity of SGL over recent years is understandable: Cows have more time between mating and artificial breeding (AB), and with this comes ongoing fertility paybacks.

SGL also allows many farmers to smooth out the production curve for the season, and, perhaps most significantly, there are financial rewards in getting cows to produce milk earlier.

What ever the short gestation breeding goal, LIC has three distinct SGL solutions - each one designed to fulfil subtle differences in the needs of the farmers who use them.

Compact calving plus BW

Offered to farmers who seek a higher breeding worth (BW) option, combined with sound traits-other-than-production.

This frozen SGL solution enables the farmer to retain the option of keeping replacement heifer calves.

Sires in the team are a mix of daughter proven and genomically selected bulls, selected from within the breeding scheme for possessing a short gestation length.

Short gestation Hereford

Short gestation Hereford bull semen is tailor-made for farmers seeking genetic herd improvement: Used across the bottom portion of a herd from the start of the season (allowing the farmer to focus replacement-quality semen on the rest of the herd), this SGL solution results in a beef product that can be reared or on-sold.

Typically white-faced calves, it is likely the progeny will be easy to identify.

The semen also provides farmers a potential safeguard if used between standard AB and the short gestation dairy product (acting as a marker).

Short gestation dairy

Continued growth and demand for SGL dairy suggests LIC customers enjoy the results of this multi-faceted solution.

Selection of bulls is based entirely on gestation length, and the solution is designed for farmers wanting to target later-cycling cows.

The product promises to help condense the following season's calving period.

SGL dairy bulls are bred to achieve the shortest-possible gestation length.

No-bull benefits

When reproductive performance is good, short gestation length semen gives farmers the ability to have fewer (or no) natural-mating bulls on farm, even at the tail end of mating.

A 'no bull' policy on farm:

- simplifies management of farm, pasture, and animals
- simplifies staff health & safety, staff tasks, staff rostering
- allows for a more controllable and tighter calving spread
- helps to reduce the risk of introducing disease on farm

More days in milk worth \$12.6 million

293,050 inseminations recorded last spring by LIC, resulting in



146,525 calvings



an average of 7 extra days in milk from early calving



1.89 kg MS per-cow production per day through peak: August-November (Dairy Statistics 2015-2016)



based on a \$6.50 payout

= \$12.6 million

Production and type traits are not part of the criteria, so calves should not be kept as replacements.



Packing-A-Punch with Forward Pack

by Greg Hamill, Genetics business manager



Greg Hamill

This is always an exciting time of the year for LIC's genetics team as we scrutinise each Animal Evaluation (AE) run, watching how the latest cohort of sires rank, and re-rank, as production data and traits-other-than-production (TOP) information is fed into the national database.

The nature of genetics dictates there will always be an upward movement for some and inevitable downward movement for others.

So this is not only an exciting time but also a nervous time, especially for our sire analysts as the contract mating decisions and bull purchasing decisions made in previous years now either come fruition or don't.

Our premium product, Forward Pack, gives farmers access to the best-of-the-best (of the best!).

The best daughter proven bulls, the best genomically selected bulls, and the best spring bulls (selected on early-season proofs).

The farmers who choose Forward Pack are investing in an opportunity to maximise their genetic gain, and at

this time of year, they are also eagerly awaiting to see what new graduates they will have access to - a full year ahead of anyone else.

We have also been monitoring how Forward Pack has been tracking since we first started marketing the solution in its current format, combining daughter proven and spring bulls.

We have already had the 2013 and 2014 Forward Pack teams all become fully daughter proven now - and each one of those teams has outperformed the Daughter Proven teams.

We are currently receiving data on the 2015 team (the genomic bulls in that team are currently getting their daughter proofs), and it is pleasing to see that once again each Forward Pack team is ahead of the Daughter Proven teams (based on this early season information to date).

Many farmers attended the Herd Improvement days that LIC held around the country at the beginning of the year.

On the back of this, anecdotal evidence suggests that this year more farmers are trying to maximise genetic gain through not only mating their poorer performing cows to beef options, but focusing on ensuring the calf they get out of their better cows is the best possible calf they can get.

LIC's genetics team believes this has caused the significant increase in the number of farmers opting in to use LIC's Forward Pack.

We have some very promising new sires coming through with new proofs that are going out in the 'day two' spot in Forward Pack.

114081 Tirohanga WTP Flash has continued to climb over the last few runs and is a welcome addition to the Holstein-Friesian Forward Pack team.

Flash is currently sitting at \$194BW and is out of the genomically used and now proven Te Poi. 114004 Stirling and 114024 Delta join Flash as inclusions in the Friesian team.

Following on from Casey's article (p 28/29) that references the Oakura stud, Okura LT Integrity not only is a great sire of daughters, it also appears he's going to be a sire of sires, with two sons graduating into the Forward Pack: 314022 Winston and 314015 Brice currently sitting at an impressive \$209 and \$201 BW respectively.

514018 Glen Koru Epic joins the KiwiCross team at a very reputable \$211 BW. Epic is a Crusader son stemming back to the popular sire Super Stan.

Along with the regular AE updates that are currently happening, we will continue to monitor and include or exclude bulls from our Forward Pack teams as more information flows into the national database. This will help ensure LIC delivers to its farmers 'the best-of-the-best-of-the-best on any given day.

It is not too late to get into the action and switch your mating plans to Forward Pack.

This can be done between your three-day semen delivery schedule: Simply speak to your LIC AB Technician or contact your local Farm Solutions Manager or Representative.

All the very best for the remainder of the mating season.

Always On-Trend: Looking Sharp in Black

by Charlotte Gray, LIC sire analyst



Charlotte Gray

Forget efficiency - cows need webbed feet and the ability to get energy from rainwater and mud in this weather (in most regions, at least)!

Spring truly has given us the short-end-of-the-stick this season.

Last spring was pretty awful for a good chunk of the country, but dare I say it this spring has surpassed it.

With calving behind us and mating underway for most, it is, however, good to see the paddocks greening up, and at LIC the Livestock Selection and Genetics teams are office-bound studying the Ranking of Active Sires (RAS) list pretty closely.

In the thick of this rollercoaster weather, one good thing that comes from this time of year is the graduation of our next crop of bulls.

These 2013-born bulls, which themselves were the result of mating decisions made in 2012, now have their first crop of daughters milking in sheds nationwide, courtesy of LIC's Sire Proving Scheme.

Daughter proving a bull is a four-year process, and even though genomic information provides increasingly

accurate indications of how the bulls may shape up, nothing tells the truth more honestly than their daughter proof.

Until these up-and-coming spring bulls hit 75% reliability, and have herd-tested daughters in at least 10 herds nationwide, their names won't make the RAS list.

Our new 14-code graduates are yet to hit 75% reliability, but they're on their way!

First cab off the rank for the KiwiCross breed, at 63% reliability, is **514018 GLEN KORU EPIC**, who hails from the Waikato with an impressive breeding worth (BW) of 211.

His imperial dam is a seriously milky cow with lovely type, whose lactation worths (LW) have continued to exceed 300, and have averaged a whopping 489 over her past five seasons.

It's hard not to mention that in her second season her LW exceeded the 600 mark, and her current PW of 350 isn't too shabby.

She herself is out of a 9-year-old powerhouse Northsea daughter who hasn't missed a season yet with a PW of well over 200.

On the paternal side, EPIC's sire is Serpentine Crusader. With 40 TOP daughters contributing to his farmer-traits and type-traits (to date), EPIC is shaping up to deliver the goods. An udder overall breeding value (BV) of 0.55 and a rear udder BV of 0.68 suggests he's destined to become an udder improver - as well as providing some robustness and capacity.

His combination of BW, farmer traits and udder BVs mean that it's a no-brainer to have him in the mix of this year's Forward Pack team.

One thing to watch with EPIC is his high pins, making him a perfect cross over any low-pinned girls. Well done to David and Karen Camp for producing such an outstanding bull.

Another exciting crossie heading toward the RAS list is the 202 BW bull **514040 BALANTIS BENNIE**.

A Speakes Bolter son (who was a genomic bull when used as a sire of sons), BENNIE comes from a 10-year-old Northsea dam which still has an exceptionally high BW of 231, courtesy of some great production in combination with fertility and body condition score.

His maternal grand dam also boasts exceptional figures with a 181 BW and 374 PW (in a cow that's two years older than the genetic base cow).

BENNIE will be available through Alpha Nominated, but given his trend for increasing BW, he may yet join the Forward Pack team, as he's hard not to like with an udder overall of 0.63 and capacity of 0.43.

The Singh family deserve solid applause for producing this excellent Southland-born bull for the industry.

With EPIC joining the Forward Pack team shortly, it really is hard to go past Forward Pack.

Given the calibre of daughter proven and genomic bulls in the mix, that exceptional injection of 'the best-of-the-best' is something to look forward to.

Remember, genetics are not like wine, they don't get better with age!

Utilising the Forward Pack team with its youthful mix will help your breeding programme stay ahead of the herd.



THESE GUYS MIGHT NOT BE CURRENTLY DESTINED FOR FORWARD PACK, BUT THEY'RE CERTAINLY WORTH KEEPING AN EYE ON:

514064 LYNKEYS ACED IT

At 191 BW, ACED IT is looking like a highly-productive young Checkpoint son with a fat BV of 30kg alone. Based on his farmer traits, his daughters are enjoyable to milk, but we'd like to see some more upside to his capacity and front teat BVs at this point.

514056 TIROHANGA TAKE NOTE

A Manzello son out of a Ramrod cow, at 188 BW TAKE NOTE is looking promising. As a J12F4 bull, he's on the lower end of the live weight scale but is A2A2 with capacity to burn. We hope to see some more upside to his TOP BVs as more daughter information flows through.

514017 GLEN KORU BECKON

From the same farm as EPIC but a different cow family, BECKON is looking to become another all-rounder with extreme production of 38kg fat and 21kg protein. Farmers have loved his daughters, with an overall opinion of 0.46, and it's great to see his daughters' udders look the part, with BECKON having a fore udder BV of 0.58 and udder overall of 0.36, and capacity of 0.58. At 176 BW currently, it'd be great to see him climb!

The Winter Way –

In excess of 300 days in milk

In the triangle of land between Raglan, Port Waikato, and Huntly, lie several dairy farms that are making the switch to (or are already established as) a full winter-milking regime. We visit one dairy farm in Ruawaro that's making the change to gain an insight in to how the farm has gone about things. We also touch on the motives and challenges of making a transition to winter-milking.

Kauri Moor dairy farm is owned by Bruce and Kay Darby, with their 26-year-old son, Rhys, responsible for managing the day-to-day operations of the farm.

As the farm's lower-order sharemilker, Rhys oversees the herd's long-established Premier Sires produced Friesian herd.

He is halfway through a three-year programme that will see the previous 800-cow, spring-milking, herd make a transition to full winter-milking herd – with the ultimate goal to maintain the same production levels using just 600 cows. "We think we can get our 300,000 kg milk solids out of 600 cows," Rhys says.

"In 2015/16, our final spring milking year, we did 276,000 kg with 800 cows. Then came our first transition year, 2016/17, when we did 320,000 kg with 700 cows, and for 2017/18 we might do 280,000 kg with 650 cows.

"We're still in transition, but the goal is that our girls will do their weight in production – a 500 kg cow will do 500 kg in solids."

It's a staggered approach that is providing plenty of obstacles, and learnings, along the way. Nature has also provided a fair lashing in the form of what turned out to be a wet winter of unprecedented proportions during 2017.



Rhys and Bruce Darby.

"The rain has had an effect, but production has dropped away this year mainly because we've milked 250 cows that didn't calve," Rhys says.

"They were carry-overs from the 2016/17 lactation and they'll milk until December 2017. So, we're carrying over 250; we calved 200 in the autumn; and we've calved 260 in the spring. Next autumn, 2018, we plan to calve 400 and milk 200 through. The year after, 2019, we'll calve all 600 in the autumn.

"A neighbour is also making the transition," Rhys says, "but is electing to make the complete switch within a year, so it's likely they're taking a bigger production hit. For us, with a longer transition phase, we're just trying to maintain cash flows."

Careful considerations

The catalyst for making the transition comes from what has been observed up the road at a second Kauri Moor farm, run by the other son of Bruce and Kay, 28-year-old Phillip.

Phillip has been successfully managing winter milking at that farm for four years, Bruce says.

"Kay and I do have some history with winter milking because we are past equity owners of a previous farm that we ran for seven years prior to our two farms," Bruce says.

"We have a bit of know-how."

Rhys agrees he's taking plenty of knowledge from his parents and from his brother's farm, which provides somewhat of a benchmark.

But he says each farm is different and a good deal of risk analysis is required before deciding whether the change from spring-milking to winter-milking is warranted. "For us, we think it makes sense for this particular farm."

Bruce adds that the decision to switch was made well before Fonterra's winter premium announcement in December 2016.

"It stacked up for us without that incentive – it made sense based on three major factors."

Rhys lists those factors as: (i) better alignment between the farm's pasture growth curve and feed demand; (ii) days in milk, and; (iii) infrastructure.

The pasture growth curve versus feed demand

"We grow minimal grass out here in the summer time; it's simply too dry," Rhys says. "Effectively we grow much more grass during winter than in summer. In June, July, and August we'll typically average 20 or 30 (kg of dry matter per hectare per day), but in summer – January to March – it's down to about 10.



The newly built feed pad at the Darby Rotowaro farm.

"So, as a spring-calving farm, we would typically feed our supplement – our maize and grass silage – through late lactation, which is that summer period."

Winter milking makes more sense because, among other factors, feed utilisation is more efficient. "With winter-milking, we can feed them throughout the year and it means they're eating the right feed and taking on-board the right nutrition, at the right times of the year. You don't lose a lot of weight through calving, and we expect to maintain the correct weights throughout the rest of the year," Rhys says. He plate-meters the farm every 10 days to keep a firm grip on overall feed supplies.

Under the winter set-up, Rhys says expectations are that cows will generally calve at 5.5 body condition score (BCS). In theory, and in the mid- to long-term, Rhys and Bruce believe the better BCS across the herd should see a positive impact on reproduction.

Winter mating starts on 10 June and consists of six weeks of artificial breeding followed by three weeks with natural mate bulls. "Our mating plan centres on Premier Sires," says Bruce, "and it's been that way since 1964." The herd's ancestry is backed by GeneMark Whole Herd parentage verification.

Days in milk

Rhys says under a spring system, the Ruawaro farm does 265 to 275 days in milk, meaning factors other than milking tend to be the focus for the remaining part of the year.

Now the transition is underway, Rhys says he won't miss some of the frustrations

that typified the farm under a spring system, especially with younger genetics: "At times you can spend a lot of your time trying to put weight on your spring calvers, and when it comes to February you need to start drying off the heifers – that's three months of non-production.

"In the winter system, we're seeking to calve down on 20 March and dry off about 10 February, so we're getting plenty of days in milk," Rhys says. "We may not get the sort of peaks we would with spring calving but, if we can average 305 days in milk each year, we're going to do a lot more production."

Infrastructure

On June 1, Kauri Moor's \$650,000 feed pad became operational. Equipped with a roof, two adjacent feed bunkers, and an upgraded effluent management system, it also features a solids separator.

"When we first looked at making the transition to winter-milking, the first discussions and debates we had were about how we could best-utilise a feed pad and effluent set-up," Rhys says. "We knew how critical to success the feed pad would be; the infrastructure is a necessity, you just have to have it."

The farm system is described as 5, with each cow's pasture-based diet complemented by 2.2 tonne of home-grown feed, together with bought-in protein and palm kernel supplement through the winter months (supplementary feed volumes have edged up by about one-third per cow since the herd came off spring-milking).

"The feed pad means there's absolutely no wastage," Rhys says, "but there's

certainly been a downside." Lameness has been a significant problem throughout the 2017 winter, with Rhys and Bruce putting the foot problems down to a combination of the wet, erosion, and stones on the edge of new races. And, prior to the installation of the feed pad, cows had been walking some distance to an old feed pad, which may have played a part.

Other observations

Beside the higher risk of lameness that a feed pad can bring, Rhys and Bruce say there are a number of other challenges that go with the territory when winter-milking.

"You have to be on your game in spotting heats," Rhys says. "With reduced sunshine hours in the autumn, heats are generally not as strong as they can be in spring – most of the time they're not even close. They're still visual enough though; we use the scratchies and they're still reasonably obvious.

"Also, the cows don't tend to come to the shed in packs (sexually active groups). In an autumn mob, the girls on heat seem to be more spread-out throughout the herd. Empty rates tend to be higher, as does the animal attrition rate."

Also, under the farm's autumn system the demands on staff and machinery can be more intense due to the continuous need to feed. Significant commitment toward machinery and maintenance costs is needed: "We can't afford any downtime with machinery," Rhys says.

Be Better @ Repro

by Nicola Hemming, reproduction solutions advisor

The last three years of national reproduction results show the average 6-week in-calf rate hovers about 66%.

In the context of the challenges of the last few seasons (e.g. low payout, poor weather conditions), the result is not altogether unexpected, but the average in-calf rate remains well short of industry targets.

Increasing consumer and environmental pressures mean that herds need to continue to deliver efficiency gains, but driving herd improvement without good reproductive performance is difficult.

This article discusses some actions you can take between now and the end of mating to help drive better repro results.

BCS & Nutrition

Research from DairyNZ¹ shows that, despite continuing to cycle, feed-restricted cows display either weak or negligible signs of heat.

This indicates that feed pinches (i.e. quantity as well as quality) during mating have a negative impact on

the ability to detect cows on heat and lowers submission rate. Figure 1 shows a real-life example of this. The farmer who experienced this feed pinch said the drop in submission rate from 2 November lined up perfectly with a period of high rainfall on his farm, so the amount and quality of grass available to his cows dropped at that time.

Because milk yield is typically linked to energy intake, the milk docket will help keep an eye out for feed pinches.

If production drops by more than 0.07-0.1 kgMS/cow/day for 2-4 days, it is likely there will be a negative impact on reproduction. If this situation happens (resources permitting), increase cow energy intake by increasing supplementary feed or pasture allocation.

Although there's no guarantee this will prevent a negative impact on reproduction, there is a greater chance that 'doing nothing' will result in a negative impact.

Heat Detection

On average, 21% of returns are short returns (returns 1-17 days after



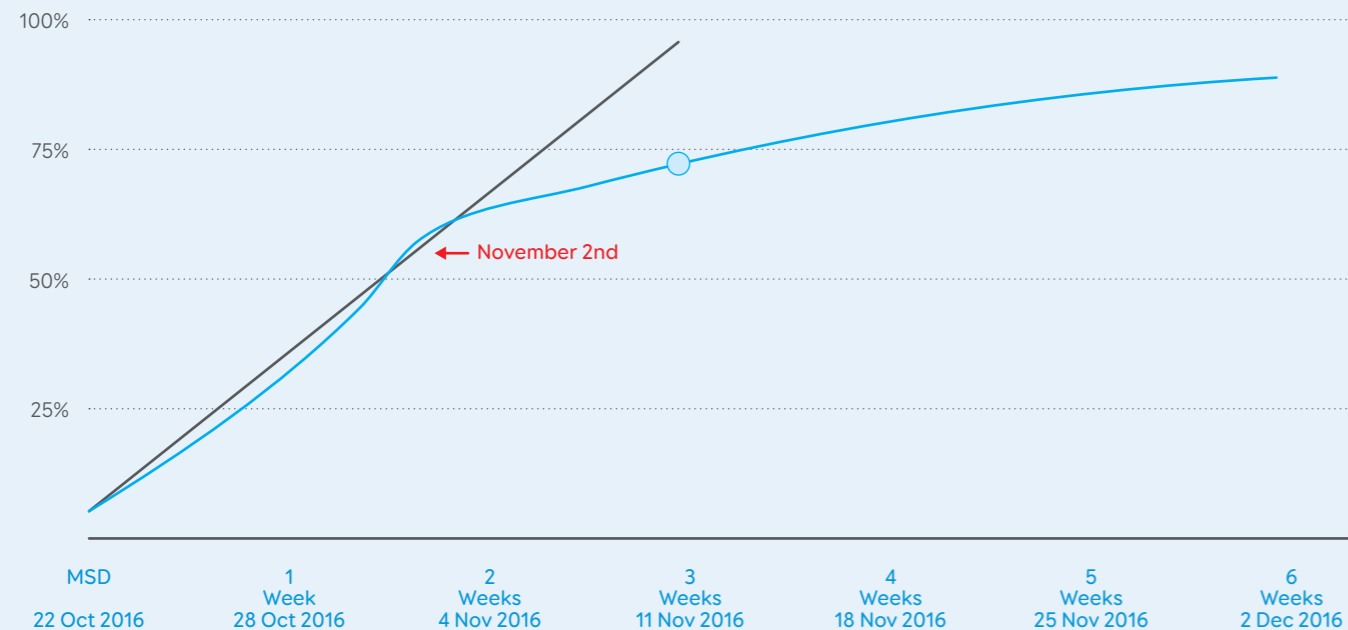
Nicola Hemming

insemination), which is 8% higher than the industry target. In other words, there are a number of 'invented' heats. Industry figures (Fertility Focus Reports) show many heats are also missed.

During the mating period consider:

- **Place & time.** Overseas studies show that about 50% of cows won't show standing heat when they're on concrete, so don't limit yourself by only looking for signs of heat as they come into the yard or when they're on the feed pad.

Figure 1: Drop in Herd Submission Rate of a farmer hitting a feed pinch.



- **Aid maintenance.** To get the most out of your heat detection aids you'll need to keep them well maintained. Take time to apply aids correctly, check them regularly, and make time for touch-ups and aid maintenance.
- **Monitoring progress.** Use the Early Indicator to get an indication of how heat detection accuracy is going this year (Mating tab in the Reproduction section of MINDA® LIVE). This indicator helps you identify early on if there is a potential heat detection accuracy problem while there's still time to correct the problem.

Heifers (R1's, first calvers and 3-year-olds)

In general, farmers are doing a better job of getting heifers to target for mating (at 15 months old), and this is reflected in the calving pattern improvements of first calvers over the last three years highlighted by Figure 2.

But the good work to 15 months is being undone in the final four months before calving: 65% of heifers are still entering the herd below target².

Although first calvers have a tighter calving pattern, they're underweight at calving and/or receive sub-optimal management once in the herd. The upshot is that the young stock fail to get back in-calf in good time.

Whether heifers enter the herd at or below target liveweight, they require extra care in their first two lactations:

- Run the 2- and 3-year-olds in a separate herd to the mixed age cows - reduce grazing competition.
- If you can't afford to put a second heat detection aid (tail paint being the first) on your whole herd for mating, perhaps put them on your first calvers to help ensure you don't miss their heats (these girls should be the best genetics in your herd, so you'll want to get as many AB calves from them as possible. Having a second heat detection aid may help you pick up more of their heats).
- Dry off the 2-year-olds earlier than the rest of the herd to help ensure they hit their calving BCS target of 5.5.

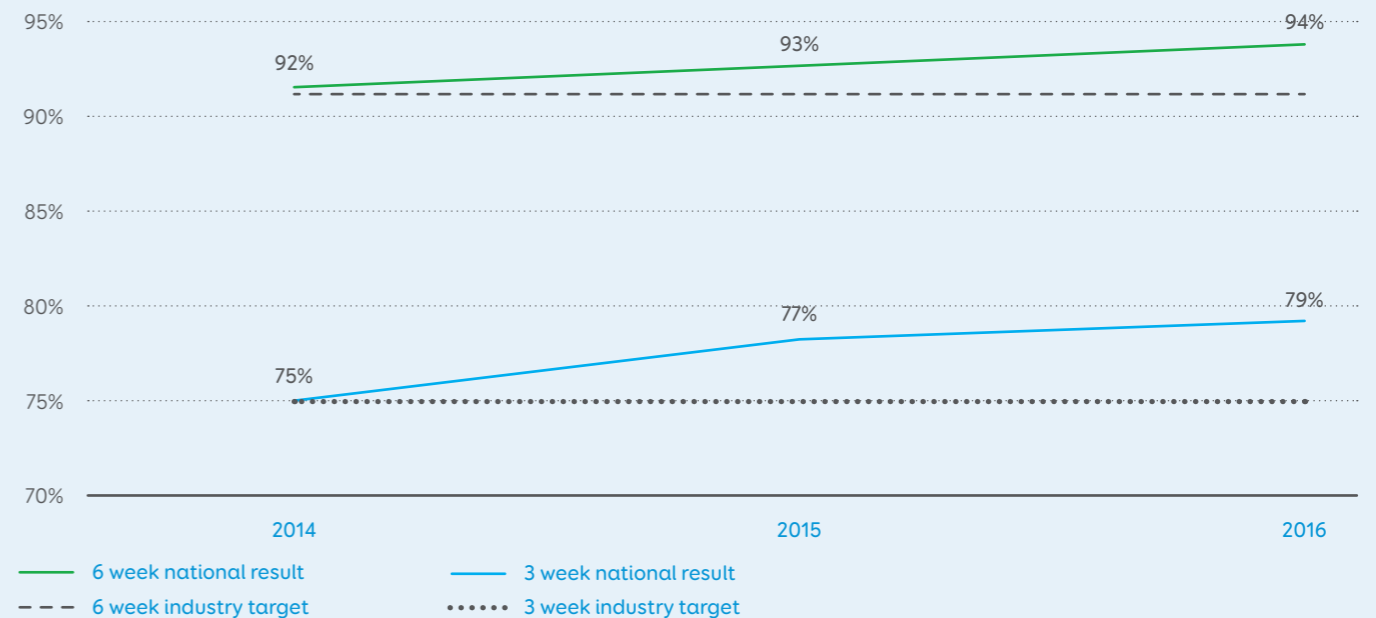
Bulls

About 95% of the industry still relies on natural mating bulls to finish up mating. Before putting the bulls out, ask yourself:

- Are there enough bulls for one bull per 30 non-pregnant cows? Use the guide below:
 1. Number of cows pregnant = number of AB inseminations done ÷ 50% conception rate
 2. Number of non-pregnant cows = herd size - number of cows pregnant
 3. Number of bulls needed in the herd = number of non-pregnant cows ÷ 30
 4. Total number of bulls needed for 2 teams of bulls = number of bulls needed in the herd x 2.
- Do you have a bull team rotation plan and some spare bulls in case any go lame or get injured?
- Is your bull management giving you the best chance of getting your cows in calf?

¹Burke et al. 1996 & Burke et al. 2010
²Handcock et al. 2016

Figure 2: Improvement in the calving pattern of First Calvers over the last 3 years





It is vital young replacement stock hit target weights at 15 & 22 months.

Weight Watching

Use of high-quality semen during the artificial breeding season is a great start, but it's no silver bullet for sustained genetic improvement within a herd.

That's according to Steve Forsman, LIC key account manager, who doubles as the co-operative's champion of heifer growth and management.

"With proper follow-through on replacement genetics, rapid-fire gains within the herd can still be achieved - but it's a matter of having the right weight gain programme in place, specifically for the rising heifers," Steve says.

"Big money poured in at AB time can be wasted if the resulting progeny are given a poor start in life by failing miserably on target liveweights during the first few years.

On the other hand, the animal's lifetime performance, both in production and reproduction, is given every chance of living up to its genetic potential if the calf hits or exceeds its key liveweight milestones, particularly the planned start of mating (PSM) 15-month target," Steve says.

Ripe for the picking

The PSM target is equivalent to 60% of the animal's mature liveweight. "If she's on-track by PSM, she'll have the



Steve Forsman

necessary structural growth in place. With a good frame on-board she's likely to have hit puberty well in-time before she meets the bull and, if she's up to weight, she's probably already had three cycles.

"In dairy cows, puberty is not an age-related thing - it's how well grown they are, so it's a weight-related thing." If the heifer falls short of the PSM liveweight, she becomes a candidate for the second round of mating and is therefore set-up to offer fewer days in milk, particularly in her first few years of milking. She also starts behind the eight-ball for getting back in calf, Steve says.

While the New Zealand farmer does many of the basics right in running

efficient pasture-based operations, Steve says there are clear opportunities for improvement.

"Paying attention to replacement genetics in their first 22 months of life is a low-reaching-fruit that's ready for the picking."

What's happened in recent years?

Recent research (McNaughton & Lopdell, 2012) illustrates Steve's point above. A 2012 study of 105,000 heifers (born between 2006 and 2010) had their actual weights compared against industry targets.

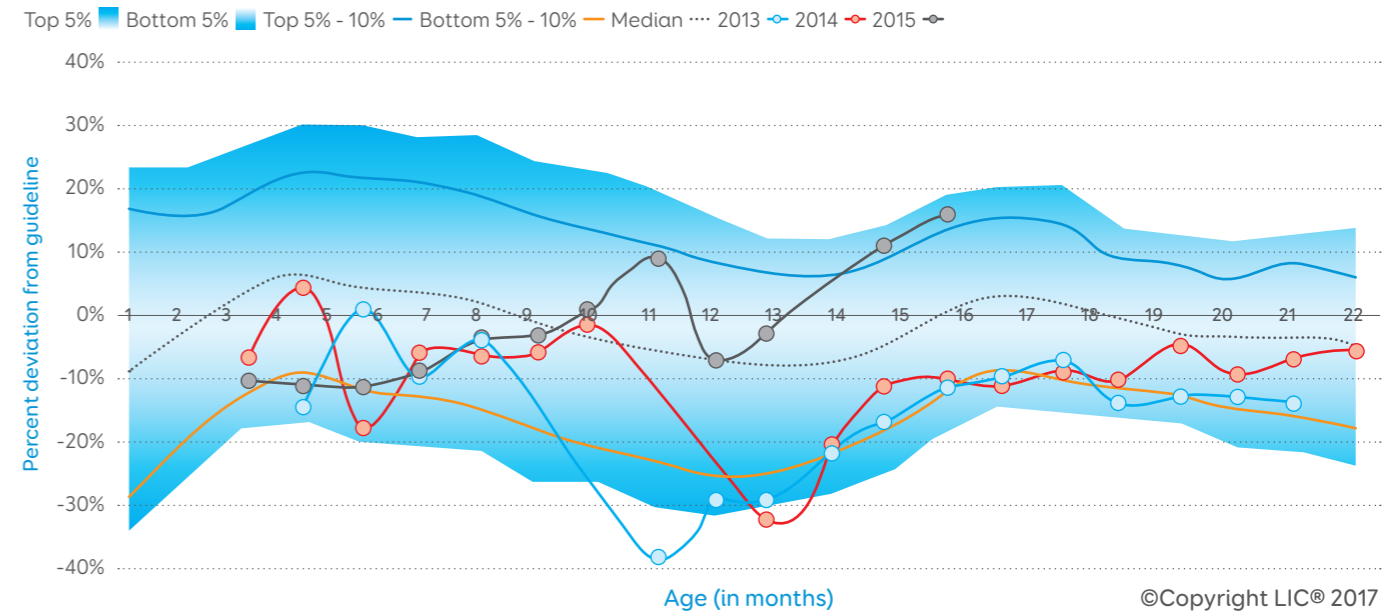
The study concluded that:

- While calves generally appear to be weaned at target liveweight, growth rates fall behind target from weaning.
- On average, the entire group (105,000 heifers) was 11% behind target at 22 months of age.
- 73% were more than 5% behind target by 22 months of age.

According to Steve, part of the problem is that heifers are frequently located away from prime grazing areas on the farm, such as on 'runoff' blocks or with a grazier, and to some extent an 'out-of-sight, out-of-mind' mentality can exist.

The obvious solution is the introduction of weighing events, and the more frequent, the better.

% Deviation from the MINDA-Weights guideline by age in months for van Eck managed farm (2013, 2014, and 2015 born heifers compared to national 2014 median)



"Using MINDA Weights, farmers can track the performance of their emerging replacements," Steve says.

"You'll quickly see if things are going off-track and the farmer or the grazier can intervene early.

"Up-to-date data tells us that, on average, MINDA Weights users of today are at least achieving, or exceeding, the early three-month and PSM targets, and they're just falling short of the 22-month target - this is a big turnaround (compared to the 2012 McNaughton & Lopdell study)"

Case Study - MINDA Weights

Frikkie van Eck, a Southland farm manager, contracted to the MyFarm syndicate, says his practice is to use a specialist grazier to raise replacement stock, but first he and wife Linde liked to "set them up well on this farm."

"All calves with a good foundation and a well-developed rumen will perform on a basic pasture management plan after weaning," Frikkie says. "We give them good quality pastures and we're shifting mobs regularly to offer them good fresh pasture."

Frikkie and Linde are relatively new to the Winton farm. The 2015-borns are the first batch of R1s they've been responsible for on the farm. The couple raised them to about six months of age before sending them off to the grazier in January.

Heifer weight results for the farm's 2015-borns saw a dramatic turnaround on the previous few seasons (see graph)

"We didn't do much different after the animals were weaned off milk, so I was pretty amazed at the (2015) results," Frikkie says.

The good performance in the 2015 cohort may have come down to better nutrition and feed at the grazier's farm that year.

Because the calves are the next generation milkers, Frikkie says close attention is paid to setting them up in

the best way possible so they'll perform: "The results will not only be with milk production but also reproduction and a good, healthy overall cow."

The farm continued to use MINDA Weights to record weights but, because regular eye-balling of the stock took place between Frikkie, the MyFarm business manager, and the stock agent, recording had not been as regular as it once was. "If we can see there's an issue emerging we'll call for them to be weighed, otherwise we just regularly check the calves to see if they're getting on okay."



Frikkie and Linde van Eck.

2017 PREMIER SIRES JERSEY DAUGHTER PROVEN TEAM



AB Code	Bull Name	gBW/BW	Reliability %	Breed Split	Protein BV/gBV (kg)	Milkfat BV/gBV (kg)	Milk BV/gBV (litres)	Live-weight BV/gBV (kg)	Fertility BV/gBV %	Somatic Cell Score BV/gBV	Total Longevity BV/gBV (days)	Protein % BV/gBV	Milkfat % BV/gBV	Calving Difficulty BV/gBV %	Body Condition Score BV	Gestation Length BV/gBV	Overall Opinion BV/gBV	Capacity BV/gBV	Udder Overall BV/gBV	A2	Sire
313045	OKURA 5-STAR INNES	201	83	J16	3.9	4.7	-406	-73	-0.1	-0.35	322	4.2	5.3	-3.6	0.14	-2	0.62	0.19	0.25	A2A2	HILLSTAR TERRIFIC 5-STAR
312034	OKURA GOLDIE INDEX	201	83	J16	10.0	33.6	-8	-70	-3.0	-0.21	196	4.0	5.5	-2.4	0.07	-2	0.23	0.00	0.03	A2A2	PUHIPUHI CAPS GOLDIE S3J
312057	BELLS CM CONRAD S2J	198	85	J15F1	6.5	20.2	-202	-16	9.8	0.10	408	4.1	5.4	-3.4	0.23	-6	-0.07	0.34	0.36	A2A2	CRESCENT AMC MARVEL
313040	FICHTL 5-STAR SULTAN S3J	196	81	J15F1	0.9	9.5	-484	-52	4.3	-0.49	324	4.3	5.5	-0.7	0.16	-3	0.31	0.72	0.78	A2A2	HILLSTAR TERRIFIC 5-STAR
313046	OKURA OLM KAINO ET	200	96	J16	-0.1	12.5	-345	-72	4.1	-0.40	306	4.1	5.4	-0.8	0.16	-2	0.46	0.63	1.09	A2A2	OKURA LIKA MURMUR S3J
311013	OKURA LT INTEGRITY	193	99	J16	1.5	26.8	-452	-48	2.2	-0.07	266	4.2	5.9	-2.1	0.29	-1	0.42	0.85	0.54	A1A2	LYNBROOK TERRIFIC ET S3J
313016	BONACORD MURMUR BOLT	190	98	J16	2.2	18.2	-287	-72	3.2	-0.53	181	4.1	5.5	-2.1	-0.04	0	0.07	0.14	0.38	A2A2	OKURA LIKA MURMUR S3J
313010	MAKARIOS MURMUR LAZARUS	186	81	J16	8.9	9.9	167	-43	5.1	-0.35	369	3.8	4.8	-2.9	0.23	2	0.30	0.51	0.40	A2A2	OKURA LIKA MURMUR S3J
Expected team weighted average		196	99		4.1	17.3	-275	-55	3.1	-0.27	299	4.1	5.5	-2.2	0.16	-2.2	0.31	0.43	0.49		

AB Code	Reserve Bull Name	BW
312014	CHARDONNAY FRANKIE	199
313006	KAIMATARAU INDY GOLLUM	195

2017 PREMIER SIRES JERSEY TEAM - FORWARD PACK

AB Code	Bull Name	gBW/BW	Reliability %	Breed Split	Protein BV/gBV (kg)	Milkfat BV/gBV (kg)	Milk BV/gBV (litres)	Live-weight BV/gBV (kg)	Fertility BV/gBV %	Somatic Cell Score BV/gBV	Total Longevity BV/gBV (days)	Protein % BV/gBV	Milkfat % BV/gBV	Calving Difficulty BV/gBV %	Body Condition Score BV	Gestation Length BV/gBV	Overall Opinion BV/gBV	Capacity BV/gBV	Udder Overall BV/gBV	A2	Sire
313045	OKURA 5-STAR INNES	201	83	J16	3.9	4.7	-406	-73	-0.1	-0.35	322	4.2	5.3	-3.6	0.14	-2.4	0.62	0.19	0.25	A2A2	HILLSTAR TERRIFIC 5-STAR
312034	OKURA GOLDIE INDEX	201	83	J16	10.0	33.6	-8	-70	-3.0	-0.21	196	4.0	5.5	-2.4	0.07	-2.0	0.23	0.00	0.03	A2A2	PUHIPUHI CAPS GOLDIE S3J
312057	BELLS CM CONRAD S2J	198	85	J15F1	6.5	20.2	-202	-16	9.8	0.10	408	4.1	5.4	-3.4	0.23	-6.2	-0.07	0.34	0.36	A2A2	CRESCENT AMC MARVEL
313040	FICHTL 5-STAR SULTAN S3J	196	81	J15F1	0.9	9.5	-484	-52	4.3	-0.49	324	4.3	5.5	-0.7	0.16	-3.3	0.31	0.72	0.78	A2A2	HILLSTAR TERRIFIC 5-STAR
314022	LINAN INTEGRITY WINSTON	209	70	J16	9.7	28.4	-75	-61	1.3	-0.14	223	4.1	5.5	-4.4	0.10	-1.8	0.43	0.17	0.70	A2A2	OKURA LT INTEGRITY
314015	TIRONUI OI BRICE ET	201	69	J16	8.0	26.3	-118	-58	2.7	-0.10	172	4.1	5.5	-1.9	0.19	-1.2	0.10	0.42	0.18	A1A2	OKURA LT INTEGRITY
315059	BONACORD AND BERNARD S2J	212	67	J16	0.2	20.6	-634	-65	3.7	-0.14	297	4.4	6.0	-2.2	0.03	-1.1	0.26	0.04	0.50	A2A2	ARRIETA NN DEGREE ET
316033	RUANUI TERRIFIC DALAS S3J	208	65	J16	0.8	15.2	-474	-60	4.4	-0.19	334	4.2	5.7	-1.8	0.23	-1.4	0.42	0.51	0.94	A2A2	LYNBROOK TERRIFIC ET S3J
316035	FOXTON LT FIXATION S2J	203	65	J16	1.3	20.0	-522	-59	1.7	-0.13	305	4.3	5.8	-0.7	0.23	2.4	0.34	0.44	0.54	A2A2	LYNBROOK TERRIFIC ET S3J
315008	PUKEROA AND BARATONE ET	200	69	J16	1.8	15.3	-587	-59	3.4	0.01	270	4.4	5.8	-0.8	0.15	-5.6	0.39	0.28	0.25	A2A2	ARRIETA NN DEGREE ET
316003	CAREYS THOR LIMERICK S2J	190	59	J16	3.9	16.9	-262	-56	3.8	-0.19	280	4.1	5.4	-2.3	0.10	-4.8	0.19	0.31	0.30	A2A2	THORNWOOD OLM THOR
315029	THORNWOOD DEGREE TRIGGER	189	68	J16	2.7	26.5	-466	-46	2.8	0.02	285	4.3	5.9	-2.3	0.06	-4.6	0.43	0.37	0.53	A2A2	ARRIETA NN DEGREE ET
316038	DEEP RIVER PCG FAVOUR	186	65	J16	4.6	27.0	-254	-40	2.9	-0.14	286	4.1	5.6	-1.0	0.15	-0.5	0.46	0.53	0.31	A2A2	PUHIPUHI CAPS GOLDIE S3J
315001	LITTLE RIVER LT MOZART	183	65	J16	0.6	12.3	-499	-50	3.6	-0.02	338	4.3	5.6	-2.2	0.18	-2.3	0.57	0.33	0.77	A2A2	LYNBROOK TERRIFIC ET S3J
Expected team weighted average		200	98		5.8	20.2	-254	-56	2.4	-0.19	277	4.1	5.5	-2.6	0.14	-2.7	0.30	0.30	0.39		

AB Code	Reserve Bull Name	BW
314011	KAITAKA OI LEROY ET	202

Shaded bulls are daughter proven with AEU BW & BV's 16/10/2018
 Shaded bulls are spring bulls selected on their recent daughter proofs.
 Shaded bulls are genomically selected with LIC gBW & gBV's data. Source date 02/10/2017

2017 PREMIER SIRES KIWICROSS™ TEAM - DAUGHTER PROVEN



Evaluation Date 16/10/2017

AB Code	Bull Name	gBW/BW	Reliability %	Breed Split	Protein BV/gBV (kg)	Milkfat BV/gBV (kg)	Milk BV/gBV (litres)	Live-weight BV/gBV (kg)	Fertility BV/gBV %	Somatic Cell Score BV/gBV	Total Longevity BV/gBV (days)	Protein % BV/gBV	Milkfat % BV/gBV	Calving Difficulty BV/gBV %	Body Condition Score BV	Gestation Length BV/gBV	Overall Opinion BV/gBV	Capacity BV/gBV	Udder Overall BV/gBV	A2	Sire
511011	PRIESTS SIERRA	217	98	F11J5	22.8	36.4	397	40	8.3	-0.31	533	3.9	5.1	0.3	0.15	-6.9	0.58	0.40	0.29	A2A2	FAIRMONT MINT-EDITION
511026	ARKANS BEAUT ET	210	99	F9J7	25.8	22.0	420	3	3.0	-0.33	377	4.0	4.8	-0.9	0.09	-7.2	0.26	0.47	0.25	A1A2	NEVRON SHOWMAN
513054	BURGESS TRICKSHOT ET ^	206	79	F8J8	28.5	38.5	775	-17	0.9	-0.10	328	3.8	4.8	1.3	-0.18	-6.6	0.26	-0.01	0.03	A2A2	FAIRMONT MINT-EDITION
513015	HORIZON CONSCRIPT ET	194	83	F7J9	17.1	17.3	425	-20	6.4	-0.23	354	3.8	4.7	-1.3	0.20	1.6	0.09	0.41	0.37	A2A2	OKURA LIKA MURMUR S3J
513016	HORIZON BLAZER ET	188	85	F9J7	16.4	22.3	343	-7	5.1	-0.31	342	3.9	4.9	-0.9	0.29	-4.9	0.07	0.86	0.48	A1A2	IL VERO AMORE POWER
512024	WERDERS PRELUDE	187	84	F10J6	26.6	10.7	467	21	4.8	-0.11	411	4.0	4.5	0.9	0.20	-4.1	0.33	0.78	0.60	A2A2	NEVRON SHOWMAN
512050	ARKANS PERSPECTIVE-ET	185	92	F8J8	13.9	22.2	95	-21	4.7	0.01	350	4.0	5.1	-0.9	-0.03	-3.6	0.20	0.10	0.60	A1A2	FAIRMONT MINT-EDITION
513074	SCHRADERS TUSK	180	83	F9J7	13.0	17.2	220	-23	4.7	-0.16	409	3.9	4.9	-2.4	0.03	-9.9	0.52	0.05	0.40	A1A2	WAIWIRA WARLORD
512005	JUST ONCE COOPER	178	84	F9J7	10.5	27.0	3	-30	3.7	0.08	293	4.0	5.3	-0.5	0.01	-9.7	0.54	0.14	0.57	A2A2	ST PETERS OBSIDIAN
513007	ARKANS BEST BET	174	84	F8J8	21.2	26.8	283	21	1.6	-0.05	427	4.0	5.0	0.5	0.11	-7.2	0.34	0.39	0.48	A1A1	ARKANS BEAUT ET
513051	WOODHEYS SPEED DIAL	173	98	F7J8	14.9	22.5	-12	-22	1.5	-0.12	240	4.1	5.2	-0.2	-0.13	-0.8	0.25	0.00	0.48	A1A2	HILLSTAR TERRIFIC 5-STAR
511051	DRYSDALES SOVEREIGN	169	87	F8J8	13.6	18.5	146	-1	0.6	-0.46	378	4.0	5.0	-1.6	0.34	-5.5	0.45	0.98	0.63	A2A2	PRIESTS SOLARIS-ET
Expected team weighted average		194	99	F9J7	19.8	24.4	360	-4	4.4	-0.18	379	3.9	4.9	-0.4	0.09	-5.5	0.31	0.38	0.39		

AB Code	Reserve Bull Name	BW
513004	ARKANS COMRADE	173
513058	TARAMONT ICARUS	164

^ Recessive Fertility Gene carrier

2017 PREMIER SIRES KIWICROSS TEAM - FORWARD PACK

AB Code	Bull Name	gBW/BW	Reliability %	Breed Split	Protein BV/gBV (kg)	Milkfat BV/gBV (kg)	Milk BV/gBV (litres)	Live-weight BV/gBV (kg)	Fertility BV/gBV %	Somatic Cell Score BV/gBV	Total Longevity BV/gBV (days)	Protein % BV/gBV	Milkfat % BV/gBV	Calving Difficulty BV/gBV %	Body Condition Score BV	Gestation Length BV/gBV	Overall Opinion BV/gBV	Capacity BV/gBV	Udder Overall BV/gBV	A2	Sire
512048	ATHLIAM PACEMAKER ^	221	98	F6J10	10.3	16.1	-79	-41	6.9	-0.02	451	4.1	5.2	0.3	0.09	-7.4	0.09	0.11	0.16	A1A2	NEVRON SHOWMAN
511011	PRIESTS SIERRA	217	98	F11J5	22.8	36.4	397	40	8.3	-0.31	533	3.9	5.1	0.3	0.15	-6.9	0.58	0.40	0.29	A2A2	FAIRMONT MINT-EDITION
513066	MOURIES LUIGI ^	217	81	J10F6	15.4	11.9	65	-29	2.2	-0.46	458	4.1	4.9	-0.7	0.16	1.9	0.19	0.09	0.73	A2A2	SCOTTS BRITESTAR
511026	ARKANS BEAUT ET	210	99	F9J7	25.8	22.0	420	3	3.0	-0.33	377	4.0	4.8	-0.9	0.09	-7.2	0.26	0.47	0.25	A1A2	NEVRON SHOWMAN
513054	BURGESS TRICKSHOT ET ^	206	79	F8J8	28.5	38.5	775	-17	0.9	-0.10	328	3.8	4.8	1.3	-0.18	-6.6	0.26	-0.01	0.03	A2A2	FAIRMONT MINT-EDITION
513098	ARKANS BOUNTY	194	88	F5J11	19.7	25.8	332	-16	0.8	-0.14	326	3.9	4.9	-0.3	0.21	0.5	0.46	0.68	0.95	A1A2	OKURA LT INTEGRITY
514018	GLEN KORU EPIC	211	63	J9F7	22.8	25.3	279	-8	3.4	-0.14	301	4.0	5.0	0.7	0.13	0.3	0.41	0.39	0.55	A2A2	SERPENTINE CRUSADER
516024	ARRIETA BRANSON-ET	215	63	F7J9	21.5	31.9	176	-12	2.7	0.09	325	4.1	5.2	0.0	0.08	-5.7	0.40	0.36	0.42	A2A2	SAN RAY FM BEAMER-ET S2F
516025	ARRIETA BREW-ET	213	63	F7J9	22.1	27.8	272	-15	2.8	0.06	350	4.0	5.1	0.2	0.08	-4.0	0.33	0.36	0.42	A1A2	SAN RAY FM BEAMER-ET S2F
516015	HYJINKS SNAPPER	209	64	F7J9	15.0	30.0	94	-17	3.7	-0.05	388	4.0	5.3	-0.1	0.18	-0.4	0.58	0.49	0.80	A1A2	LYNBROOK TERRIFIC ET S3J
515622	LYNSKEYS FATHER GATLEY	206	77	F10J6	18.9	19.3	98	12	2.0	-0.49	429	4.1	5.1	-0.8	0.23	-7.6	0.71	0.18	0.06	A2A2	PRIESTS SOLARIS-ET
516074	CROSSANS CRITICAL-ET	204	58	F10J6	20.3	17.9	450	-21	4.8	0.05	360	3.9	4.7	-1.3	0.05	-3.8	0.25	0.21	0.42	A2A2	KRAAKMANS JAYDIE
516055	BRAEMARK BATTLE AXE	203	61	F11J5	23.3	33.3	284	0	1.9	0.00	340	4.0	5.2	0.2	0.01	-3.0	0.13	0.29	0.31	A2A2	SAN RAY FM BEAMER-ET S2F
516043	ARKANS BOOMBOX-ET	199	59	F11J5	23.3	22.2	633	-12	3.9	-0.21	418	3.8	4.6	-0.5	0.04	-0.9	0.24	0.27	0.63	A2A2	KRAAKMANS JAYDIE
516019	BURMEISTERS EROS-ET	199	64	F9J7	22.8	17.4	502	9	3.3	-0.53	317	3.9	4.6	-0.1	0.27	-4.3	0.61	0.85	0.24	A2A2	PRIESTS SOLARIS-ET
516069	SPRING TRALEE BEAUDEN-ET	195	62	F13J3	21.9	18.9	474	-1	6.1	-0.20	392	3.9	4.7	-0.5	0.08	-0.1	0.10	0.44	0.56	A1A2	KRAAKMANS JAYDIE
516014	COLFOLS CONVINCER-ET	192	61	F9J7	16.9	22.1	233	-4	5.3	-0.35	344	4.0	5.0	-1.7	0.15	-2.7	0.11	0.33	0.28	A1A2	KRAAKMANS JAYDIE
Expected team weighted average		211	98	F8J8	20.6	24.7	303	-8	4.1	-0.21	399	4.0	5.0	0.0	0.10	-3.8	0.32	0.31	0.39		

^ Recessive Fertility Gene carrier

- Shaded bulls are daughter proven with AEU BW & BV's 16/10/2018
- Shaded bulls are spring bulls selected on their recent daughter proofs.
- Shaded bulls are genomically selected with LIC gBW & gBV's data. Source date 02/10/2017

114081 Tirohanga WTP Flash S3F



Breeder B & J Moore
Sire Wearnes FE Te Poi S3F
Dam Tirohanga Jus Flavour S2F
MGS Aronamee JB Justice

PRODUCTION BVs Daughters 91 Herds 39

Protein	Milkfat	Milk	Liveweight	Fertility
36 kg	33 kg	1008	40 kg	5.4 %
3.8 %	4.5 %			

Total Longevity	Somatic Cell	Calving Difficulty	BCS
384 days	- 0.07	0.2 %	-0.02

INDIVIDUAL PRICE **\$30.00** +GST
 SPRING PAK FROM **\$21.96*** +GST

* Includes 10% InvestaMate discount

TOP TRAITS **BW/Rel \$194/66%**

	BV	-0.5	0	0.5	1	
Adaptability to milking	.29					quickly
Shed temperament	.25					placid
Milking speed	.18					fast
Overall opinion	.38					desirable
Stature	.80					tall
Capacity	.37					capacious
Rump angle	-.06					sloping
Rump width	.88					wide
Legs	.08					curved
Udder support	.37					strong
Front udder	.19					strong
Rear udder	.23					high
Front teat placement	.32					close
Rear teat placement	.63					close
Udder overall	.41					desirable
Dairy conformation	.51					desirable

A2 Protein	A1A1	TOP daughters	53
Gestation Length	-1.1 days	OAD	1237

Holstein-Friesian F15J1
 Registered Pedigree (Supplementary) Evaluation Date 16/10/2017 **AE**

114004 Telesis GB Stirling S3F



Breeder G A Wilson
Sire Greenwell TF Blitz-ET S3F
Dam Telesis Mint Heidi S2F
MGS Fairmont Mint-Edition

PRODUCTION BVs Daughters 110 Herds 44

Protein	Milkfat	Milk	Liveweight	Fertility
35 kg	24 kg	761	20 kg	2.2 %
3.9 %	4.5 %			

Total Longevity	Somatic Cell	Calving Difficulty	BCS
219 days	- 0.10	1.4 %	0.00

INDIVIDUAL PRICE **\$30.00** +GST
 SPRING PAK FROM **\$21.96*** +GST

* Includes 10% InvestaMate discount

TOP TRAITS **BW/Rel \$183/68%**

	BV	-0.5	0	0.5	1	
Adaptability to milking	.29					quickly
Shed temperament	.26					placid
Milking speed	.07					fast
Overall opinion	.38					desirable
Stature	.43					tall
Capacity	.23					capacious
Rump angle	-.06					sloping
Rump width	.16					wide
Legs	-.06					curved
Udder support	.00					strong
Front udder	-.24					strong
Rear udder	-.30					high
Front teat placement	.09					close
Rear teat placement	.31					close
Udder overall	.08					desirable
Dairy conformation	.45					desirable

A2 Protein	A1A1	TOP daughters	66
Gestation Length	0.3 days	OAD	1212

Holstein-Friesian F16
 Registered Pedigree (Supplementary) Evaluation Date 16/10/2017 **AE**
 # Red Factor carrier

314022 Linan Integrity Winston



Breeder C & L Megaw
Sire Okura LT Integrity
Dam Linan Quality
MGS Tawa Grove Maunga ET SJ3

PRODUCTION BVs Daughters 140 Herds 51

Protein	Milkfat	Milk	Liveweight	Fertility
10 kg	28 kg	-75	-61 kg	1.3 %
4.1 %	5.5 %			

Total Longevity	Somatic Cell	Calving Difficulty	BCS
223 days	- 0.14	- 4.4 %	0.10

INDIVIDUAL PRICE **\$30.00** +GST
 SPRING PAK FROM **\$21.96*** +GST

* Includes 10% InvestaMate discount

TOP TRAITS **BW/Rel \$209/70%**

	BV	-0.5	0	0.5	1	
Adaptability to milking	.29					quickly
Shed temperament	.38					placid
Milking speed	.12					fast
Overall opinion	.43					desirable
Stature	-1.00					tall
Capacity	.17					capacious
Rump angle	-.17					sloping
Rump width	-.18					wide
Legs	.07					curved
Udder support	.55					strong
Front udder	.34					strong
Rear udder	.92					high
Front teat placement	.09					close
Rear teat placement	.42					close
Udder overall	.70					desirable
Dairy conformation	.25					desirable

A2 Protein	A2A2	TOP daughters	48
Gestation Length	-1.8 days	OAD	1290

Jersey J16
 Registered Pedigree Evaluation Date 16/10/2017 **AE**

314011 Kaitaka OI Leroy ET



Breeder D Hickey
Sire Okura LT Integrity
Dam Kaitaka TGM Leonie
MGS Tawa Grove Maunga ET SJ3

PRODUCTION BVs Daughters 94 Herds 44

Protein	Milkfat	Milk	Liveweight	Fertility
7 kg	23 kg	-255	-70 kg	-0.9 %
4.2 %	5.6 %			

Total Longevity	Somatic Cell	Calving Difficulty	BCS
263 days	- 0.15	- 2.8 %	0.02

INDIVIDUAL PRICE **\$30.00** +GST
 SPRING PAK FROM **\$21.96*** +GST

* Includes 10% InvestaMate discount

TOP TRAITS **BW/Rel \$203/68%**

	BV	-0.5	0	0.5	1	
Adaptability to milking	.52					quickly
Shed temperament	.62					placid
Milking speed	.05					fast
Overall opinion	.47					desirable
Stature	-1.10					tall
Capacity	.33					capacious
Rump angle	-.40					sloping
Rump width	.21					wide
Legs	.05					curved
Udder support	.52					strong
Front udder	.65					strong
Rear udder	.81					high
Front teat placement	.20					close
Rear teat placement	.07					close
Udder overall	.78					desirable
Dairy conformation	.46					desirable

A2 Protein	A1A2	TOP daughters	35
Gestation Length	2.7 days	OAD	1285

Jersey J16
 Registered Pedigree Evaluation Date 16/10/2017 **AE**

514018 Glen Koru Epic



Breeder D & K Camp
Sire Serpentine Crusader
Dam Glen Koru E-Imp Erina
MGS Ewings Imperial

PRODUCTION BVs Daughters 68 Herds 34

Protein	Milkfat	Milk	Liveweight	Fertility
23 kg	25 kg	279	-8 kg	3.4 %
4.0 %	5.0 %			

Total Longevity	Somatic Cell	Calving Difficulty	BCS
301 days	- 0.14	0.7 %	0.13

INDIVIDUAL PRICE **\$30.00**
+GST

SPRING PAK **\$21.96***
FROM +GST

* Includes 10% InvestaMate discount

TOP TRAITS

BW/Rel **\$211/63%**

	BV	-0.5	0	0.5	1	
Adaptability to milking	.25					quickly
Shed temperament	.20					placid
Milking speed	.41					fast
Overall opinion	.41					desirable
Stature	-.07					tall
Capacity	.39					capacious
Rump angle	-.89					sloping
Rump width	.24					wide
Legs	.10					curved
Udder support	.45					strong
Front udder	.31					strong
Rear udder	.68					high
Front teat placement	-.16					close
Rear teat placement	-.30					close
Udder overall	.55					desirable
Dairy conformation	.40					desirable

A2 Protein	A2A2	TOP daughters	40
Gestation Length	0.3 days	OAD	1278

KiwiCross F7J9

Evaluation Date 16/10/2017



514040 Balantis Bennie



Breeder B & P Singh Family Trust
Sire Speakes Bolter
Dam Balantis N Tammy
MGS Scotts Northsea

PRODUCTION BVs Daughters 76 Herds 37

Protein	Milkfat	Milk	Liveweight	Fertility
25 kg	27 kg	627	-11 kg	4.2 %
3.8 %	4.7 %			

Total Longevity	Somatic Cell	Calving Difficulty	BCS
343 days	- 0.02	- 0.3 %	0.08

INDIVIDUAL PRICE **\$30.00**
+GST

SPRING PAK **\$21.96***
FROM +GST

* Includes 10% InvestaMate discount

TOP TRAITS

BW/Rel **\$202/65%**

	BV	-0.5	0	0.5	1	
Adaptability to milking	-.06					quickly
Shed temperament	-.09					placid
Milking speed	.11					fast
Overall opinion	.03					desirable
Stature	-.39					tall
Capacity	.43					capacious
Rump angle	-.09					sloping
Rump width	.22					wide
Legs	.06					curved
Udder support	.65					strong
Front udder	.55					strong
Rear udder	.66					high
Front teat placement	.09					close
Rear teat placement	.46					close
Udder overall	.63					desirable
Dairy conformation	.44					desirable

A2 Protein	A2A2	TOP daughters	35
Gestation Length	-6.0 days	OAD	1273

KiwiCross F10J6

Evaluation Date 16/10/2017



2017 Alpha Nominated Yearling Bulls

You may have noticed a change to the 2017 Alpha Catalogue's genomic sections: The section was missing the newest cohort of yearling bulls that is normally profiled.

Formerly LIC profiled these bulls in February, but this was well before the first production data was collected between July and August.

However, this at times led to a situation where the advertised yearlings could not be supplied: This was caused by the bulls not reaching sexual maturity in time, not meeting processing targets, or displaying quality/collection issues.

That's the hand nature deals us at times!

The upshot was that invariably LIC had to go back to clients in early-October, explaining the genetics team was no longer able to meet order requirements.

This year the genetics team has waited until collection data has been completed before making selections.

The bulls below have been hand-picked by LIC sire analysts, based not only on the young bulls' genomic information but the strength of strong maternal families, with breeding worth (BW) and diversity front-of-mind.

These bulls can be individually purchased or selected in part with other genomically selected sires in a Genomic Pack.

LIC Yearling/17-code bulls

Code	Name	BW/Rel	Fat	Protein	Volume	LWT	Fertility	Capacity	Udder Overall	A2	Sire
117051	Busy Brook SB Fortune S2F	189/59	34	33	728	31	2.2	0.36	0.46	A1A2	San Ray FM Beamer-ET S2F
117001	Arkan MGH Believer-ET S2F	182/63	21	34	961	21	2.4	0.12	0.72	A2A2	Mourne Grove Hothouse S2F
117066	Meander TT Asset-ET S2F	184/56	35	34	837	42	1.1	-0.07	0.34	A1A2	Tregaron Technician S2F
117069	Meander MH Armour-ET S2F	175/61	28	31	755	32	3.9	0.07	0.60	A1A2	Mourne Grove Hothouse S2F
117083	Busy Brook HF Lynx-ET S1F	176/61	45	39	1,120	31	-2.5	0.19	0.55	A1A2	Hazael Dauntless Freedom
117028	Greenwell TT Fuel-ET S2F	170/56	31	33	775	39	0.9	0.16	0.49	A1A2	Tregaron Technician S2F

Code	Name	BW/Rel	Fat	Protein	Volume	LWT	Fertility	Capacity	Udder Overall	A2	Sire
317023	Shepherds LT Flint ET S3J	217/65	24	7	-348	-46	2.2	0.53	0.84	A2A2	LynbrookTerrific ET S3J
317001	Glanton SS Bastille S3J	204/65	26	6	-309	-46	3.3	0.68	0.44	A1A2	Stratford WTH Strider S2J
317049	Shelby SS Lorenzo S3J	200/65	16	2	-526	-53	3.7	0.47	0.37	A1A1	Stratford WTH Strider S2J
317010	Bells LT Fullspeed S3J	189/64	24	6	-277	-38	1.7	0.56	0.65	A2A2	LynbrookTerrific ET S3J
317048	Glanton SS Baltic ET S3J	186/64	16	1	-617	-51	2.2	0.67	0.31	A1A2	Stratford WTH Strider S2J

Code	Name	BW/Rel	Fat	Protein	Volume	LWT	Fertility	Capacity	Udder Overall	A2	Sire
517023	Horizon Boulevard-ET F10J6	210/59	40	30	595	14	0.7	0.40	0.47	A2A2	San Ray FM Beamer-ET S2F
517054	Mouries Angelo F10J6	211/61	26	24	397	4	2.6	0.47	0.54	A1A2	San Ray FM Beamer-ET S2F
517067	Cawdor Pinnacle F9J7	213/60	31	19	109	-18	2.7	0.33	0.49	A2A2	San Ray FM Beamer-ET S2F
517001	Arkans Patriarch-ET F10J6	207/60	26	15	42	-17	4.8	0.25	0.66	A1A2	Kraakmans Jaydie
517050	Burmeisters Hardcore F6J10	200/65	31	21	339	-7	2.0	0.57	0.65	A2A2	LynbrookTerrific ET S3J
517057	Taramont Aquatic-ET F11J5	192/58	13	23	426	-10	3.6	0.29	0.67	A2A2	Kraakmans Jaydie

INDIVIDUAL PRICE **\$30.00**
+GST

GENOMIC PAK **\$24.26***
FROM +GST

LIC Data Source: 2/10/2017

* if 10% InvestaMate discount applies



Calving Difficulty

by Greg Hamill, Genetics business manager



Greg Hamill

My name is Greg and I'm married with three children. My children did not all arrive on their due date, nor were they all the same size; in fact, the births were all completely different. Genetically I am only half the equation - I like to think my wife contributed as well!

On farm it is no different. Calves will not all arrive on their due dates, and there will always be some calvings that need assistance.

But heritability of calving difficulty is merely 4%, meaning 96% of assisted calvings are influenced by environmental factors.

Calving difficulty heritability & the need to record

Every bull that goes through a breeding company's sire proving scheme has calving assistance recorded for every birth: This is compared within-herd, and then across the country, to give the sire a Calving Difficulty Breeding Value (BV).

A calving difficulty BV of 2.0, for example, indicates that by using the relevant sire you would expect to assist 2% more births than a sire with a 0 for calving difficulty. Conversely, a bull with a calving difficulty BV of -2.0 indicates you could expect to assist 2% less than a bull of 0.

It is important farmers record the level of assistance given to cows in MINDA software. This information goes to Animal Evaluation and the national database, and is constantly updated.

The more accurate the recording, the more accurate the calving difficulty BV of the sire is.

Environmental impact

On the environmental front, there are so many climatic/weather, feed and health variables at play each year. No farmer should expect results to be the same each year.

For example, not all cows are dried off on the exact same day as the previous year (in the exact same body condition, after completing the exact same number of days in milk!). Autumn, winter and spring growth rates vary, as does grass quality. While we do our best to present our animals with their daily requirements, this is frequently a 'best guess'.

Pasture utilisation also varies - at times it is difficult to ensure each cow is getting her full daily requirements. In the last month of pregnancy, the growing calf is pushing against the stomach, restricting the amount of feed the cow is able to consume.

The calf continues to take its daily requirements from the cow. If weather conditions turn cold and wet, and there's poor pasture utilisation (with additional feed required for warmth), cows can slip into negative energy balance. Scenarios such as this can lead to plenty of assisted calvings; cows simply don't have the energy to push the calves out.

Because the farmer has to assist more than normal, calves can be perceived as being bigger. In general, when the actual calves are eyeballed in the calf shed, they appear no bigger than usual.

When environmental conditions are unfavourable, increased metabolic issues and retained membrane problems typically follow.

An increased rate of assisted calvings in yearlings can generally be attributed to two main factors:

1. Inadequate maternal pelvic size, directly correlated to heifers not reaching 90% of mature liveweight by calving.
2. Oversized calf due to high calf birthweights: Tend to be male calves that go over due; foetal growth rates during the last month of gestation are about 0.3-0.5 kg per day.

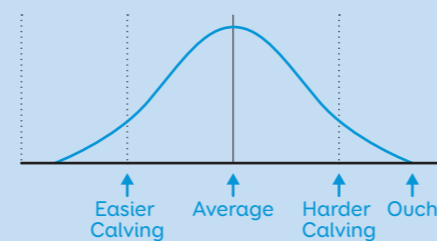
SGL & fodder beat

With the increased use of short gestation products to give additional days in milk, the industry has seen an increased use of short gestation Hereford, used as a marker product between AB dairy replacement sires and AB short gestation dairy (terminal) sires.

As with all LIC beef pack sires, the SGL Hereford bulls are selected first for calving ease, then for gestation length.

While the sires LIC use are within the top percentile for calving ease (within breed) - meaning the easiest calving Herefords available on the market are used - the reality remains that beef animals are going into a dairy cow, and an increase in assisted calvings can be expected.

Calving Difficulty



It is important that when using SGL Hereford as a marker in a block period, smaller animals are mated to an animal suited to their size.

We know that calving difficulty is impacted by under - and over-feeding.

We also know that fodder beat is high in glucose, and that calves in their last month of gestation require higher levels of glucose. The impact that fodder beat

(continued next page)...

Blind Quarters

Given recent publicity about blind quarters, we take a look at the symptoms of the problem, and review a 2007 study of two-year-old cows which set out to determine whether 'the blind udder' condition could be attributed to family genes.

One of the more disappointing and frustrating conditions observed in freshly calved dairy heifers is the 'blind quarter'.

The heifer presents an udder that, at first glance, seems normal in every way - except that one quarter cannot be milked out: There is a failure of milk to flow from the higher glandular udder areas to the udder sinus and teat below. Attempts to 'clear the blockage' usually fail, and the heifer becomes what is known in the industry as a 'three-titter'.

The origins of this condition are not fully understood, and therefore it has been difficult to accurately explicate the problem.

Blind quarters can arise from either:

1. a lack of normal development of the milk-producing glandular tissue and collecting ducts, or;
2. damage to those udder structures by trauma or infection.

In the past, post-mortem studies of affected udders have clearly demonstrated that these delicate

structures can be over-run by scar tissue. Scar tissue is the body's final response to damage caused by infection or trauma.

This can occur in the adolescent heifer following mastitis caused by suckling cohorts, or by physical trauma to the udder - such as an injury caused by straddling over wooden or pipe railings. However, the lack of development of glands and ducts in some of these cases poses the question of congenital origins, which leads to the question of inheritance.

Because several individual farmers seemed to have a higher than average incidence in blind quarter cull rates, a study to determine heritability was conducted by researchers at LIC.

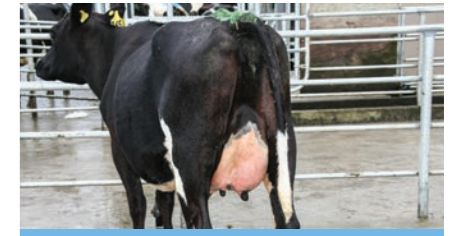
The data used for the study came from two-year-old animals in a 2007 dataset:

'All two-year-old animals that were culled in 2007 for three-titter reasons, or for having a blind quarter', were compared to 'all other normal two-year old animals born in the same herds'.

Results showed:

- The heritability in cases defined as blind quarters was calculated at 0.002.
- The heritability of those cases defined as three-titters was calculated at 0.005.
- The combined heritability was 0.006.

In other words, less than 1% of all the 'udder variation involving blind quarters' between 'affected' and 'normal' udders over the population of two-year-olds (in 2007) was due to genetic factors. Therefore, more than



Genetics play an almost-negligible part in blind quarters.

99% of the variation was due to non-genetic factors.

This study agreed with an independent study on the same condition carried out by Duraes et. al (1982) in the USA, where the heritability of blind quarters within breeds was calculated to be zero.

These studies strongly suggest that blind quarters, and associated factors that lead on to three-titters, are not inherited.

Separate studies on those farms that have suffered a high incidence of the condition found that the affected heifers had many different sires. This wide range of genotypes of animals affected with blind quarters also suggests low heritability.

The most likely environmental factors that cause the condition remain as physical trauma to the adolescent udder, or (following the breakdown of the keratin teat plug after cohort suckling) infection.

For further information refer to the following research:
Duraes MC, Wilcox CJ, Head HH, van Horn HH. Frequency and Effects on Production of Blind Quarters in First Lactation Dairy Cows. *Journal of Dairy Science* 65:1804-1807. 1982

Lopdell T. Heritability of Blind Quarter Incidence in New Zealand. *Strategy and Growth Group, LIC. 2010.*

...(continued from p26)

has on calf size is currently unknown, but it is understood DairyNZ is doing some research in this area.

Note a bull's breeding value for calving difficulty is an average of all his progeny. Every bull will have a portion of calves at the top end of the bell curve (i.e. above average) and may cause calving difficulty when mated to specific cows.

Many factors will contribute to the ease or unease of a calving, the sire and the dam, but the biggest contributor will be the environment on farm.



It is important to record any calving assistance in MINDA

Sexed Semen Now 'A Game-Changer'?

Generating enough heifer replacements every year generally isn't too much of an issue on most New Zealand dairy farms.

The theory is simple – as long as the farmer has twice as many cows in-calf to artificial breeding than the number of replacements required, the reproductive needs of the farm will be met (based on the statistical probability that 50% of the calves born will be heifers).

However, the volatile environment of the past few seasons has heightened awareness among many dairy farmers that every cow pregnancy represents an opportunity to create additional on-farm value. To capitalise on that opportunity, an increasing number of farmers want to generate a higher-ratio of heifer replacements than normal from their better-performing cows.

This potentially has two major benefits:

1. It ensures the 'genetic pipeline' is strong.
2. It provides an 'opening' to mate the poorer-performing cows to lower-cost alternatives that provide potential to generate an additional revenue stream (for example, Hereford or Wagyu semen).

The solution in generating more heifers than normal from the higher genetic-merit animals in the herd is to 'sex' the semen before insemination.

Considerable interest in sexed semen has been expressed among LIC customers since the cooperative first trialled the product in 2007. However, results among users of the frozen sexed semen solution were varied, leading to disappointing outcomes for some farmers who used the product.

From LIC's point of view, there was also a considerable opportunity cost: The sexing process destroys large quantities of semen, with each bull collection



Sexed semen frees up alternative mating options across the rest of the herd.

producing only about 400 sexed fresh straws (compared to potentially 5000 to 8000 unsexed fresh straws).

In recent years, the shortcomings of the frozen sexed product have driven demand for the liquid (fresh) semen alternative. But the supply of the liquid product comes with many limitations – restrictions include time-of-year availability, location and breed.

Meanwhile, Sexing Technologies, the provider of the service that 'splits' the male and female chromosomes to 'sex' the semen, has claimed rapid technological advances in its frozen technologies and processes. The company says significantly less damage to the semen is now occurring, to the point where non-return rates are limited to merely 5% less than the conventional frozen product – this is based on what has been achieved in overseas markets.

LIC is therefore conducting a 'frozen trial' this spring among approximately 100 farmers across the country. A combination of sexed and conventional straws have been distributed across two breeds (Friesian and KiwiCross). Farmers have agreed to supply LIC with pregnancy diagnosis information, which will provide accurate conception rates to complement the non-return

rate information through LIC's DataMate systems (entered during the mating period).

The results are eagerly anticipated, both at LIC and among the growing number of farmers interested in having their replacement semen straws 'sexed'. There is a good deal of optimism within LIC that results will be in line with what Sexing Technologies has experienced in its overseas markets.

It is therefore possible that farmers will have access to the highest ranking genetic merit sires as a sexed product. Because it can be frozen, there will be no restrictions on time-of-year availability, location, or breed. Collections from the country's top daughter-proven bulls could be frozen outside of the mating season and utilised with acceptable non-return rates.

Being able to generate additional heifer calves from the highest-merit bulls over a farmer's highest-merit cows will allow farmers to fast-track their genetic gain like never before.

Milk Pregnancy Testing



Ray Curtin at home farm in Waitoa.

It's critical to Ray Curtin that he identifies which cows are empty out of the 1400-odd Friesians grazing across his six family* farms.

But he's "not at all worried," he says, "about aging the pregnancies of those in-calf."

As far as he's concerned, the hassle, time, and overall cost of scanning – merely to age hundreds of pregnancies – seems superfluous.

"For me it's an outdated methodology ... I've thought for years there's got to be a better way."

Ray is one of a small but growing number of farmers who are bucking tradition by embracing a new system to distinguish in-calf cows from empty ones.

He's doing this by using the same milk from his herd test samples to test whether his cows are pregnant.

"It's silent, it's non-invasive, it's incredibly accurate, and it doesn't upset the cow's routine or her production in the middle of summer." Ray is speaking from experience. Next January will mark the fourth time he has undertaken milk pregnancy testing (he was a participant in the first two years of trials before the solution became commercially available to all farmers in early 2017).

"But I can't argue with the accuracy of the milk tests. Of the 30 rechecks recommended after the milk pregnancy tests, the vet's scan results in April confirmed all but one were indeed empty."

Katherine McNamara, LIC Diagnostics product specialist, says Herd Test samples are checked for pregnancy-associated glycoproteins.

Glycoproteins are produced by the presence of a placenta, and sufficient levels of these proteins can be used to detect pregnancy from 28 days after conception.

The test is, therefore, appropriate four weeks after a cow's last known mating date.

The recent induction regulations had triggered the need for a tighter calving pattern for Ray, which is nowadays down to nine weeks.

"We've got to bite the bullet with calving so we're completely done by 10 September."

Several years ago, Ray, along with many farming colleagues, had put the natural mate bulls out until early February – but it was now standard practice to pull the natural mate bulls out well before Christmas (this year by December 15).

Not only does this compact the calving, but it allows plenty of time before the first herd test of the New Year and is, coincidentally, an ideal time for the milk pregnancy analysis.

We get our herd test results and our pregnancy test results all-in-one," Ray says.

"It's easy, I like the simplicity that milk pregnancy testing offers."

**Ray and wife Arna Curtin own six farms, although several are owned in conjunction with their Chicago-based son Vincent. It is a family business, with daughter Angee and son-in-law Dean running one of the farms.*

"Yes, it's true that milk testing doesn't age the pregnancy, but quite honestly it doesn't need to ... when I'm reaching industry standards, 78% of the herd will be in-calf to AB (artificial breeding) anyway, so those dates are all recorded.

And, to me, what's left to the natural mate bull for the final three weeks doesn't matter."

Another factor is the "flaw of nature", he says: "Invariably the ultra-scan, or the vet, cannot guarantee a date anyway; it's no more perfect than aging via a mating date.

"Let's be honest, discrepancies will happen – just like with human babies, some individuals will be two or three weeks late, others might be a week early. Nature is, at times, imperfect or random at best."

Ray inseminates most of his cows to Premier Sires with a select few going to nominated bulls through Alpha.

Once the first six weeks of AB is complete, the easier-calving natural mate Jersey bulls go out for a period of three weeks, with a ratio of one bull to 20 cows.

Like many farmers in his area, Ray was disappointed with an empty rate that varied between 12% and 15% last season – he normally keeps it down to less than 8%.



Dam of 314022 Linan Integrity WINSTON.

2017: The Year the Cream Rises to the Top

by Casey Inverarity, bull acquisition manager

Question: What do this year's global dairy trade (GDT) auctions and the Jersey breed have in common?

Answer: The strength of milk fat.

This season fat has been punching above its weight on the GDT, and coincidentally the Jersey 2017 spring bull offering is the strongest that we have seen in some time.

Some might say the stars are lining up to be the year of Jersey.

We have the latest-and-greatest, and we are delivering to you NOW.

Not only does LIC have the first - and second-ranked bull on the Jersey Ranking of Active Sires list (as at the 16/10 Animal Evaluation run), but its Premier Sires team and Forward Pack offering are simply going from strength to strength.

The Okura stud is a household name in its own right as it boasts the first-, second-, and third-ranked Premier Sires bulls.

And Okura's fourth bull in the team needs no introduction: Okura LT Integrity is quickly earning legendary status here at LIC, based on the truly stunning daughters he's producing



Casey Inverarity

(both farmers and LIC's bull acquisition team continue to rave about his daughters!).

Through this bull's use as a genomic sire, Forward Pack users can this year

begin to reap the rewards of his sons which are receiving their proof now: These spring bulls are production bulls.

However, Integrity is merely half the story of these three budding 'new-elites'.

The maternal line of these Integrity sons certainly contribute their share to the equation. These bulls are simply from some of the very best cow families the Jersey breed has to offer.

With the respective dams' production worth (PW) averaging 333, the sons have improved upon Integrity's milking speed and front teat placement. They also stem from cow families that simply last the distance. The grandams of this line-up lasted an average of 13.5 lactations (the average cow in New Zealand lasts 5.5 lactations).

314022-Linan Integrity WINSTON
The Kingmaker.

He's shaping up to be among, if not, the most-complete, bull we have in LIC's Jersey stable.

Used as a Forward Pack and nominated bull, Winston already has 140 daughters milking and 48 TOP daughters. The results show an udder overall breeding value (BV) of 0.70.

At 209 breeding worth (BW), we see outstanding production with 20kg fat and 10 kg protein, fantastic type with udder overall of 0.7, and solid stature.

Winston's dam is one of the premier Maunga cows in the country who absolutely lives up to her name 'Quality'. It's a family that screams strength and capacity, with a tremendous frame.

I had the pleasure of viewing this 10-year-old cow and her 15-year-old dam last year.

Exciting is an understatement, so huge congratulations to Colin and Linda Megaw of Waitara.

Available now through Alpha Nominated and Forward Pack.

314015-Tironui OI BRICE ET
There is something seriously freaky in this family: Four maternal brothers are coming through with a proof this spring, and boy are they hitting their straps.



314011 Kaitaka OI LEROY ET.

These brothers have an outstanding average BW of 198.

With what we see of Brice's daughters to date, he certainly deserves to be the first one to market.

This is a bull that simply does the good things well, much like his breeders Murray and Janet Gibb of Taupiri. Available now through Forward Pack.

314011-Kaitaka OI LEROY ET
At 203 BW, Leroy is a name already familiar to the industry given his use in the Forward Pack of 2015.

He is shaping up to deliver!

Des Hickey from Ohinewai has already witnessed success with half-brother Leo currently on the Ranking of Active Sires list at 196BW.

This cow family is shoring up that special status known in our team as 'a proven cow family'.

Leroy's full sister is one of seven family members that have classified as excellent.

She has stuck in my mind since dam inspections in the Autumn, and to me, it's not a huge surprise that Leroy's early daughter conformation is as strong as it's now exhibiting. This is a family we are continuing to work with, and I look forward to what else comes through the pipeline. Available now through Alpha Nominated.

314050-Glanton Jingo BERLIN
Special mention to a bull we are not marketing yet, but is making steady BW gains.

At 217 BW he has shot up to the top of the class.

Top notch production with a fat & protein combination of an incredible 45kg - this is something we haven't seen in the Jersey breed before.

This is a favourite cow family of mine from the well-known Glanton stud of Hawera.

It's early days with TOP daughters, and we would like to continue to monitor the progression of his udder BVs before we put this bull out to market. I'm keeping my eye on this guy and so should you.

There's still a lot more daughter proofs to roll-in, but the 14-code crop is looking to be one we can all be proud of and one of the strongest we have seen yet.

If we were to pick a 2017 Premier Sires team today the bottom bull would be at an outstanding 198 BW.

Our commitment and responsibility to you is to deliver the best Premier Sires team we can with the best information we have at the time. This is why we will continue to monitor and adjust which bulls are delivered each AE run.

Congratulations again to all of our breeders. Thank you for delivering a bull team to the industry that you can be truly proud of.

Forward Pack is a great concept, and it is an outstanding option to use this spring.

Why wouldn't you get into it?



Summer crop chicory – great for multiple feeds.

Words from the Wise Guy

Most farmers still have up to eight months of the 2017/18 season to make the most of.

by Paul Exton, FarmWise consultant



Paul Exton

In this article, experienced FarmWise consultant Paul Exton summarises what farmers could focus on¹ during the coming months.

Many areas of the country have had higher than normal rainfall during winter and early spring, and conditions remain heavy underfoot.

High rainfall or not, on farm there are likely to be key issues to address:

Mating

We are into mating and it is critical that herds are well fed through to the end of November. Both quantity of feed and quality of feed must be maintained.

There will be a range of both quantity and quality as a result of farms controlling surpluses.

Meanwhile, some farms will be increasing or decreasing shed or pad feed quantities, and systems 1 and 2 farms might be electing once-a-day as a means of getting cows in-calf (should feed be too tight).

No matter the farmer's strategy, the pasture management principles should remain the same – namely, feeding cows well and leaving behind residuals of 1600 kilograms of dry matter per hectare.

Race maintenance to prevent lameness

The wet weather across many dairy regions has caused damage to races, and neglected drainage systems may also cause ongoing problems if they're not addressed.

Capital expenditure this season with farm races should be a priority. Identify the work needed and book the contractors.

It is important to minimise potential causes of ongoing lameness, and the first place to start is to ensure integrity of the roading infrastructure.

To cash in on grass you've got to prepare

Significant pasture damage has occurred on many farms and in summer-dry areas it's too late to undersow. On these farms, it's recommended that increased pasture renovation happens in autumn, with under-sowing and grass-to-grass renovation.

Meanwhile, in summer-wet areas, under sowing short rotation ryegrasses into damaged pastures is a good option for summer feed.

Cropping

The worst-damaged paddocks can go into crops, such as chicory or turnips. Chicory and turnips offer additional feed for the summer, and maize and fodder beet provide feed for the autumn and 'setting-up' for next season.

Chicory is great for multiple feeds from December to March. Turnips provide a bulk of feed in January and February. How much crop will be determined by the severity of damage but, for best establishment, remember that new grass needs to be in by mid-March (which makes fodder beet more difficult).

Climate

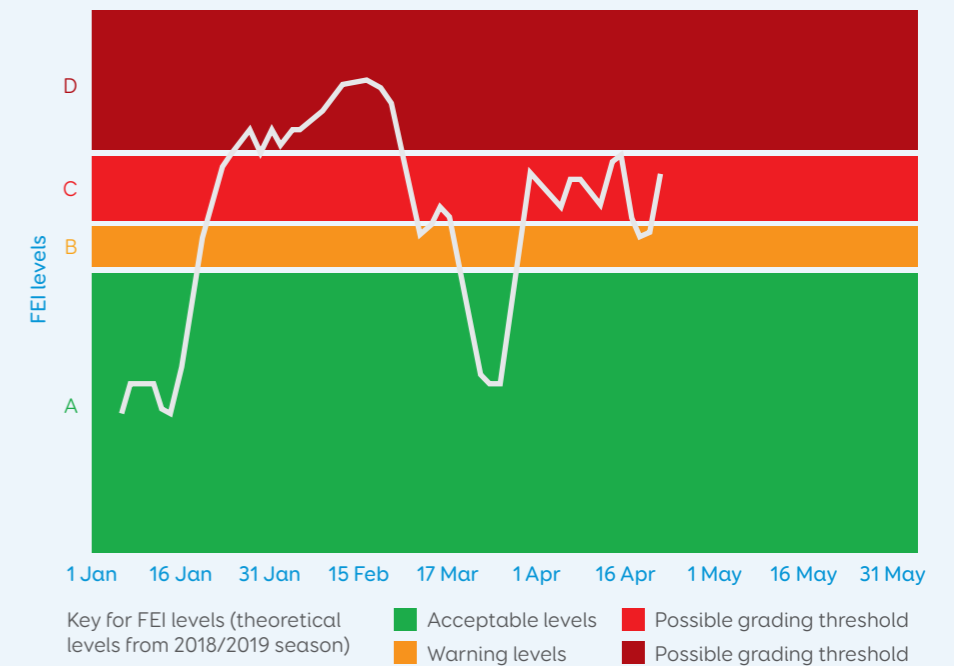
We've had a lot of rain already this year, so is your glass half-full or half-empty for summer predictions? When it comes to what's going to happen in summer, the pessimists say drought and the optimists say a good summer.

It won't be at all surprising if we see something 'in-between' the above.

Get a summer feed plan in place and remember to include contingencies that allow it to be easily tweaked. By now you should know probable silage quantities on farm.

This season is the last year Fonterra farmers will be free to use high levels of palm kernel (PKE) in the summer.

Fat Evaluation Index 2016/2017 Season



Where To With PKE?

Among Fonterra farmers, grading for excessive fat evaluation index (FEI) levels from PKE use starts in the 2018/19 season.

This season, most farmers have some leeway but suggested levels of no more than 3 kgs PKE per cow per day should be in-place. Farm observations suggest that higher levels up to 5 kgs can be fed in spring if cows have plenty of other feed or grass.

FEI levels appear to be related to the percentage of the diet that is PKE, rather than any specific quantity. Significant FEI differences can also occur according to the oil content of PKE used.

When it comes to FEI levels, spring is not necessarily the challenge – summer is.

Of the farms I deal with (in the Waikato), the majority would have graded last summer (see the above graph) – and that was a relatively good summer.

To avoid grading in the summer of 2019, additional supplements are likely to be needed, together with a drop-back on levels of PKE fed.

Where will alternative supplements come from?

If the farm system is operating efficiently, grass will already be utilised well. If farmers want to continue feeding

at recent summer levels, the only alternatives available are additional crop, grass silage, and maize silage (again, depending on supplement price and the milksolid payout!).

If you want additional feed to carry into the 2018/19 summer, you'll need to carry that through from this season's harvest. This might involve changing the pattern of supplement use this year. For example, spread PKE over a longer period at reduced rates, with heavier feeding in the autumn (once dry), and saving grass and maize silage for the following summer.

Dropping stocking rate by culling earlier (depending on feed and MS prices) could be the most economic option once grading comes in.

The challenge is to think about how grading and PKE use will affect your farm business, and what can be changed to avoid grading. This summer you could manipulate PKE feeding levels to see what levels your farm can feed safely. Record feeding levels and watch the FEI graph. Ask for the oil percentage of your PKE delivered; it typically ranges between 7% and 13%. The amount of oil content will significantly affect the FEI levels.

¹The recommendations made in this article are of general nature only. For specific farm advice, see a professional dairy farm consultant, such as a FarmWise adviser.

A Flash-Stirling-Delta Trifecta

by Taylor Connell, LIC sire analyst



Taylor Connell

This time of year is always exciting for LIC's Livestock Selection team.

The bull calves purchased almost four years ago have gone through the steps of the Sire Proving Scheme, and have finally started to get their first production and Traits Other than Production (TOP) information from their two-year-old daughters.

But the wait has been worth it!

From a cohort of nearly 100 Holstein-Friesian bulls, it gives me great pleasure to write about three of the new boys who have risen above the rest.

These guys will enter the Premier Sires Forward Pack as spring bulls.

For farmers who have ticked the Forward Pack box, it's a mating season to look forward to.

Forward Pack users will effectively be 'one step ahead' and have milking daughters of these sires a year earlier than those on Premier Sires Daughter Proven.

A select number of these guys will also be available for purchase through Alpha Nominated.

114081 TIROHANGA WTP FLASH S3F

At 194 breeding worth (BW) our highest new graduate is Flash!

The mating of Te-Poi (a genomic sire at the time) over an incredible Justice cow has produced a bull that sires daughters with a fantastic combination of production, fertility, udders, and type.

Breeding a Premier Sire is nothing new to Barry and Jocelyn Moore, with sires like Apache and Kashmir in past Premier Sires teams - so it's great to see yet another cow family emerge to join the ranks.

With Flash's dam carrying a production worth (PW) of 320, it's easy to see where Flash daughters get their powerful production from - he's certainly a bull to keep an eye on in the future.

114004 TELESIS GB STIRLING S3F

There is no doubt Blitz has influenced the Holstein-Friesian breed through four years as a Premier Sire - and now we see this continue through his sons.

Stirling, previously used as a Forward Pack genomic bull, returns in fine form with a daughter proof.

He boasts a phenomenal Mint-Edition dam sitting at 188BW and 345PW; an overall opinion breeding value (BV) of 0.38; a protein BV of 35kg, and tops it off with a BW of 183.

There's more to come from this family - High-Time (out of a half-sister to Stirling) made the Forward Pack team last year, and we look forward to receiving his daughter proof this time next year.

In the meantime, however, all eyes are on Stirling - a bull that breeder Geoff Wilson can certainly be proud of.

114024 MONOWAI FI DELTA S2F

Illustrious has done it again!

Used as a genomic bull over Delta's dam, he will be the third Illustrious son to be named between the Daughter Proven and Forward Pack teams.

From the cow family that bred Monowai Debonair, Delta has climbed a whopping 50 points over the last three New Zealand Animal Evaluation runs to sit (currently) at 177 BW.

He's definitely one to keep watching.

His Frostman dam and Banquet grand-dam have longevity to burn, both of which have calved every year and are in their seventh and 11th lactations respectively.

It's no surprise then where Delta's 302-day longevity BV comes from.

While a little high in the pins at - 0.65, Delta offers the package of production, udders, and BW. Congratulations to Alan & Linda Powell for breeding this bull.

While in many ways this spring has been one to remember for the wrong reasons (the rain, the rain, and the rain!), it's nice to know that there are some very respectable young Friesians heading the industry's way.

With these boys backing the Forward Pack team this year, it's a salute to the success of the Sire Proving Scheme, our bull breeders, and most importantly, our shareholding farmers!

114004 Telesis GB Stirling S3F as a two-year-old (he is now aged four).



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