

Working to secure your future

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Gain insight into Josh & Lauren

- finalists in the Farmers
Weekly Awards 2023,
Dairy Farmer of the Year

Josh & Lauren, hailing from Hampreston Manor Farm, secured their position as one of the top three finalists for the 2023 Farmers Weekly dairy farmer of the year award. So, let's find out a little more about Josh & Lauren and their business and what their drivers of success are.

Firstly, let's run through some farm facts; 270 autumn calving grass-based cows self-fed in the winter, running 60 R1's and 60 R2's, producing 6500 litres at 4.5% fat & 3.6% protein, selling on a solids contract to Blackmore Vale. The farm covers 182 hectares in total with a 100 ha platform, half of which can be prone to flooding at any time of the year, depending on the rainfall hitting the River Stour and the flood prevention scheme for local houses. Over the years, the cows have been LIC bred to try and reduce their "legginess and size", with the goal of breeding a cow of suitable stature with good depth and capacity, ideal for a grass and forage-based system. With the cows grazed for 310 days in 2022, this will be reduced to around 280 days in 2023, due to wet conditions and floods at various points of the season.

Josh & Lauren are in a joint venture with Anne & Guy Trehane, whose family has been farming the land for the past 120 years. The joint venture is a 50:50 stock ownership with the couple owning the

machinery, and with Guy & Anne owning the fixed assets such as parlour, tracks and water equipment. The profit-share is 80:20 in Josh & Lauren's favour with both getting a 10% return on capital invested.

Neither Josh nor Lauren come from farming backgrounds. Josh's father works as a builder, and after spending six months working for his father after leaving school, Josh decided it wasn't the right fit for him. He had already worked part time on a local farm while attending school, so enrolled as an apprentice at Kingston Maurwood. This was followed by a role on a 200-cow housed system, followed by a position as a herd manager on a 400-cow split block grass and forage-based system. Eventually, he took on the role of herd manager for the previous contract farmer at Hampreston Manor. When the farmer made the decision to redirect his efforts toward his family business, Josh & Lauren seized the opportunity to step up by purchasing the cows and taking over the contract. Starting at 0% profit share,

over the last four years this increased to 50%. Lauren had always wanted to become a veterinarian, and fulfilled her dream by graduating in 2019. However, her direction changed after agreeing to rear Josh's calves for six months to fill in as a replacement for someone who had just left, and she loved it so much she stayed. The couple both look after the business management and breeding on the unit, with Lauren taking care of young stock and herd health, and Josh looking after grass, cropping and nutrition. Within their discussion groups, whenever someone seeks pricing information for any input, Josh provides the best quote, a valuable resource that benefits the rest of the group. Josh & Lauren emphasize that this business model offers an opportunity for young individuals from non-farming backgrounds, who may not have substantial financial resources, to advance and establish their own agricultural business. Neither of them began with substantial sums of money, they relied on the savings accrued whilst in employment.

When questioned about their goals, their minimum aspiration is a home and land, providing security and a place to raise a family. Beyond that, their vision is to acquire residential properties for rental purposes and possibly expanding to a second dairy unit to roll the model out on. In the event that the opportunity does not present itself, their alternative plan is to expand their ownership of cows and offer them on lease to another aspiring dairy farmer who is starting out. Originally the aim was to own a dairy farm outright, but Josh says that "Contract farming gives you the opportunity to farm in your own right without starting with a huge debt burden.



“It enables you to have a scalable business and good return on investment without a big capital investment.”

The business is standing very well in terms of comparable farm profit, compared to other farms in the discussion groups the couple belong to.

JOSH & LAUREN’S DRIVERS OF SUCCESS:

- A good relationship with the landlord and business partner is imperative.
- A good relationship with the people they employ – Dave the herdsman and Jake the apprentice.
- Looking after the cows and having the right cow for the system.
- Get off farm and network, see new ideas and make the time to do this. Josh & Lauren are members of two LIC discussion groups; Moovin on up and the Autumn group.
- The discussion groups aid Josh & Lauren by bouncing ideas, trouble shooting, creating new ideas, benchmarking physical and financial, bettering yourself and the challenge from fellow members.
- A big thing for the couple is a 40-hour working week, both for themselves and the people who work with them. This is a big statement and when asked

about the feasibility of this, it was revealed Lauren and Dave work a 40-hour week, while Josh is closer to 50-55 hours a week during calving and breeding season. Josh acknowledges the need to make improvements in this regard. Outside of the calving and breeding season, including Josh, they all have reduced working hours. Their view on working hours was inspired by a discussion group visit to Mat Boley several years ago, where he shared insights on how he managed to achieve more balanced hours. Josh & Lauren say this is important to them because they have a young team, who all have families, and they value the importance of their team spending quality time with their family.

- Invest in infrastructure and maintenance, as this ultimately provides you with time in the long run.



- Everything ready for the busy periods – calving is going to happen, you know the date so be ready for it.
- Block calving system simplicity and writing down on a piece of paper what you are going to do!
- Setting goals.
- Investing in the team; Dave and Jake. Valuing them and if something breaks, fix it to make their lives easier.



“Network, follow up leads and make sure you enjoy it!”

Finally, I spoke with three of the judges: Gaynor Wellwood, farmer and consultant from Leicestershire; Catherine Pickford, dairy farmer and last year’s winner from Somerset and Shirley MacMillan, Deputy Livestock Editor Farmers Weekly.

The first thing they all said was how close the final judging was between the finalists. The points that really impressed them about Josh & Lauren were their grasp of all their numbers, their spotless farm, what can be achieved in a short period of time with the correct forward thinking for their situation, and that they are an inspiration to young people.

Establishing and expanding a business poses challenges, with various obstacles to overcome. In response to this, Josh mentioned that securing financing can be challenging when you are young and unproven. They did manage to land some unsecured finance, but it was a small amount, and they had to pay a 9% interest rate on it. The remainder came from personal savings, a very small bit from an inheritance, and the largest part from profit-share. Josh adds, “So you have to make a profit!” With this in mind, comparable farm profit to year end August 2023 is running at 17.6p/litre.

When asked about their future plans, they shared that they plan to get married and finish paying debt next year, are actively keeping an eye out for potential opportunities and also have their sights set on purchasing a house to provide security for their future.

What advice would they offer to aspiring young individuals? Josh comments “Work hard, it is possible, start small even if it is buying just one cow, be open to learning and open to advice and flexibility, go where the opportunities are.



Graham Parks has had a busy year.

If you find his name familiar it's for good reason!

Graham, with partner Pam, hosted the BGS (British Grassland Society) spring walk at Overbank Farm, Macclesfield, Cheshire in May - a timely opportunity to showcase his grass-based dairy-beef rearing and finishing system. From this highly successful event followed multiple articles in the farming press and a nomination for the British Farming Awards 2023 - Grassland Farmer of the Year category, in which he was a finalist.

He has also welcomed several subsequent individual farmers and groups keen to learn how he, as a beef farmer paying Cheshire dairy land rents, can make it profitable.

65% of UK beef originates from dairy farms

Graham's success stems from his understanding of pasture management, which was developed when working within the dairy grazing network. When

he experimented with rotational grazing on half of his land on what was then, a small beef enterprise, he noticed the additional grass availability, particularly when it came to a significant dry spell. The set-stocked group rapidly needed supplementing whereas his rotational group lasted a few weeks longer before requiring supplementary feed. This sold him on the system. So, when circumstances meant he was looking for his next career opportunity - his belief in rotational grazing gave him the confidence to apply and win the tenancies on two side-by-side ex-council dairy farms just outside Macclesfield.

Without the ability to invest in upgrading aged milking and housing facilities, Graham set about honing his beef rearing and finishing system, developing the farm's grazing infrastructure with fencing and water. Over the years it has been simplified and refined to the system he runs today, a system Graham believes could result in a successful collaboration between beef and dairy farms to deal with our surplus calf challenge.

An opportunity for both parties

Graham buys calves at 7-14 days old from two specific spring calving units. Chosen because he can collect a large group in one go, and he trusts them to do a good job with their surplus calves by ensuring good colostrum management and early age care.

Graham buys them for a pre-agreed flat rate price, understanding that they will be a mixed group of mostly Angus and Hereford cross calves, with a small number continental cross and pure dairy bulls as well. The consistent element is that they are all from Holstein Friesian-Jersey cross type cows.

While many would consider this Jersey influence a disadvantage - for Graham it is not:

1. They are proven on grass (grass-based genetics).
2. His calf purchase price can be lower leaving him with a better margin.
3. His buyers are happy with a slightly lower carcass weight, with one buyer preferring the Jersey influence for its marbling.

You may be thinking a lower sale price for your beef cross calves isn't a win for the dairy farmer. I'd argue that a reliable arrangement which would shift a significant number of calves quickly, at





a young age, with the added guarantee of a future life would be hugely advantageous to many block calving dairy farmers, particularly with elevated competition in the market to sell the stock all at the same time.

Graham's experience with rearing dairy replacements on block calving farms prepared him for managing the 300-plus spring born calves he purchases, rears, weans then turns out. Once transitioned to grass, they are moved in front of a finishing group of cattle (Rising 3 yr olds) on a leader/follower system, hereby ensuring in their first grazing season they are getting the very best quality and rarely being challenged to hit residuals.

The 40 lightest calves are loose-housed and fed silage with 1 kg meal/head/day through their first winter to catch them up. The rest are outwintered on deferred grazing and good quality bales. At turnout around mid-February they are separated into heifer and bullock mobs and rotationally grazing throughout the year. Their second winter they are split into different groups, some in the few kennel cubicles with self-fed silage, some loose housed with bales, the rest outwintered - again on deferred grass and bales.

Having tried different outwintering crops, Graham has been led back to grass, as it is the most reliable and simple option for him. The outwintering also serves as his route to reseeding small areas of the farm each year.

Turned out again as R3's when grass growth picks up in early March, they start getting some concentrate in June for finishing. 1kg/day/head for the heifer mob, 2kg for bullocks, increasing by 1kg/day each month up to 4 kg. Graham gradually sells them as they mature - going to slaughter between 24 - 32 months old, with carcasses grading

90% O+4L, a few H grades, and some R grades. Across their lifetime Graham's stock are fed <500 kg concentrate per head.

While Graham isn't overly fussy, he does have a preference toward the native breeds which finish sooner than the continentals. Heifers vs bullocks doesn't make much difference, and the dairy bulls he finishes are doing perfectly fine as well...they are all part of the 'bigger picture' of a simple batch reared grass-fed beef production system.

Looking at the financials on a CFP basis, accounting for unpaid labour and excluding any subsidy income, Graham is making decent money. It's never going to be the giddy heights that dairy farmers have experienced in the last 18 months of record milk prices, but it is a resilient level of profit per hectare that will certainly be better than a good number of dairy farmers, and most beef farmers.

The key to this profitability as Graham sees it, is the minimal concentrate usage outwintering, stock suitable for the system, and most pivotal is the grass and rotational grazing. This allows him to maintain high kgLWT/ha outputs despite having what some might consider an 'old' average age at slaughter of 27 months. Each year this average age is reducing as Graham refines his system, along with increasing stock numbers, further improving profitability. Opportunities to utilise GS4 and SFI swards are also on the radar.

Graham employs a part time worker one day a week to help with the two-man jobs and cover the 4-plus weeks of holidays he enjoys annually. The only time of year Graham is on the farm everyday of the week is during calf rearing. The farm runs at 1.2 full time equivalents for its 850-plus head through the grazing season dropping down towards 600 through winter once the last of the finishing stock are sold off. This equates to between 2.4 - 3.5 LU/ha depending on the time of year.

While Graham would say he has a pretty good farm, he believes regardless of where he farmed his production model would be similar, only tweaking to suit the local climate and environment. If you consider the range of pasture-based dairying in all different parts of the UK, it's not difficult to imagine he'd be right.

Beef farmers are under the same pressures from input inflation and variable market prices for their product, with many relying on farming subsidies and schemes to remain viable. I hope that there are 'Graham Parks' in your area, making money and bucking this trend. But there aren't yet enough of them to truly counter one of the major Achilles heel's in the dairy sector - dealing with lower value surplus calves.

Could a version of Graham's farming model be an option for beef farmers near you?

A great many of us have improved our profitability by turning to a pasture-based production system. There is huge scope for beef farmers to do the same. But we probably need to engage and help them along their way, maybe by encouraging them to join a grazing group, mentoring them or finding examples of beef farmers locally who can be visited to demonstrate the value of change.

Helping them to help us will be beneficial to all, creating a more complete circle for our pasture-based dairying model, by ensuring more of our lower value calves have a life beyond our gates. No point labelling it 'not our problem' and expecting someone else to deal with the surplus calf challenges we face. Demonstrating viable solutions through farmers like Graham Parks is something we should all get onboard with.



Colostrum & Passive Transfer of Immunity

It's difficult to accurately assess the rate of Failure of Passive Transfer (FPT) in dairy herds, but some research suggests that up to 35% of dairy calves in the UK suffer from FPT and it is considered a more frequent problem than in other industries, including beef calves, lambs, and piglets.

Not only can FPT have immediate adverse effects on the health status and growth of the neonatal calf, but it can have a negative impact on milk production and fertility, and an increased incidence of illness and disease resulting in elevated treatment costs over their lifetime. This makes successful passive immunity a major economic consideration for livestock producers.

The process of colostrumogenesis is initiated by hormones several weeks before calving. Its composition of lactate secretions from the mammary glands and blood serum components is partly influenced by genetic parameters but is largely influenced by the feeding and management practices used for dry cows. Colostral protein content has been shown to be higher in cows fed lower dietary starch, particularly in first calving heifers, and diets with less than 12% protein can reduce colostrum quality. Other factors that can influence colostrum yield and quality are breed, age and vaccination status of the dam, dry period length, season when calving, calving difficulty and delayed collection of colostrum.

The placenta is the major regulator of calf foetal growth, and the majority of the calf's major organs, such as kidneys, pancreas, liver, lungs and spleen, form simultaneously with the placenta in early gestation. During late gestation the calf is developing the majority of adipose and muscle tissue, setting the stage for the calf's growth performance.

At birth, calves are considered monogastric as they initially rely on obtaining their nutrients from milk digestion in the abomasum, and the reticulum, rumen, and omasum of the calf are inactive and underdeveloped.

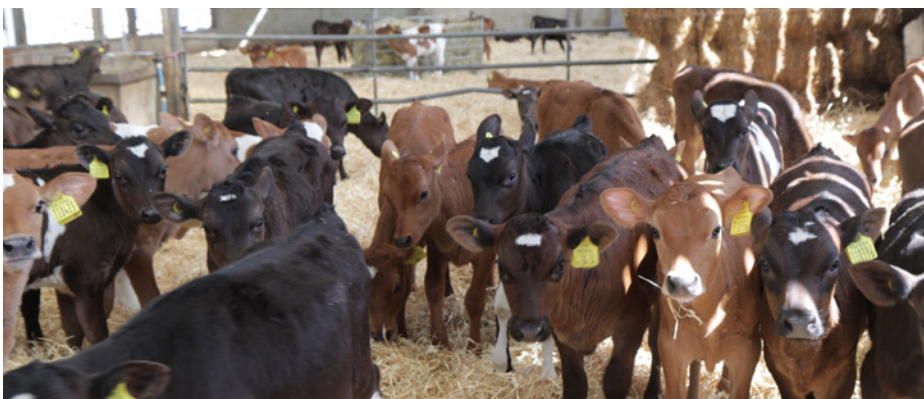
Cows have a cotyledonary placenta which has multiple areas of attachment to the uterus, and immunoglobulins are not able to be transported across the placenta from dam to foetus. This means the calf is born with little or no circulating antibodies and must develop a functioning immune system via colostrum absorption through the wall of the small intestine. Intestinal cells, known as enterocytes, will non selectively absorb a variety of macromolecules, including Immunoglobulins G (IgG), by a

process called pinocytosis. IgG are then transported across the cell and into the lymphatic system. This is called exocytosis.

Colostrum quality is at its highest when the calf is first born, but begins to decline immediately after birth, as does the ability for the calf to absorb the IgG proteins. This is called gut closure, and the exact biochemical mechanism behind this process is not completely understood. Transfer of IgG across the gut epithelium is optimal in the first 2-3 hours, and by 6 hours post calving this absorption efficiency has halved.

other important substances, each with a different role to play in the calf's development, and has known antimicrobial, anti-inflammatory and antioxidant properties.

Good quality colostrum has high levels of macronutrients and can contain over 24% solids. With up to 50% more fat than whole milk, colostrum lipids are an important source of energy and critical for thermoregulation. Total protein content can be almost five times that of whole milk and includes immunoglobulins as well as other immune factors.



Apart from the quality and quantity of colostrum, and the timing of delivery to the calf, there are many other factors that can influence the successful absorption of IgG. When fed at a lower temperature colostrum can have a lower absorption rate, as well as requiring the calf to use more energy to maintain body temperature.

Calving complications, dystocia, and metabolic disturbances etc. can also negatively impact the calf's ability to absorb nutrients and immune factors. New born calves can ingest large numbers of pathogens from the calving environment, and from mouthing the dam before digestive flora is established, and failure of passive transfer of immunity puts the calf at risk of being overwhelmed by disease causing pathogens before their own immune response has had a chance to mature.

Although generally promoted for its passive immunity benefits, colostrum is also a source of several

Oligosaccharides (OS) are essentially "simple sugars". They provide an energy source for the growth of beneficial gut bacteria in the small intestine and promote the production of anti-inflammatory compounds. They can also bind to pathogens, acting as a "decoy" and inhibiting the pathogen's ability to bind to the hosts intestinal cells, and may also enhance the absorption of IgG from colostrum into the blood. In contrast to IgG, the concentrations of OS do not decline as rapidly after the colostrum milking.

Vitamins and minerals, including calcium, magnesium, zinc, vitamin A, vitamin E, carotene, riboflavin, vitamin B12, folic acid, choline, and selenium, are also found in increased concentrations in bovine colostrum, and contribute to multiple biochemical processes in the body.

Non-nutritive bioactive compounds found in colostrum includes hormones, growth factors, cytokines, and nonspecific antimicrobial factors that stimulate maturation and function of the

“Colostrum is the single biggest factor that affects calf health and performance...”

Godden et al. *Colostrum Management for Dairy Calves*, 2019

gastrointestinal tract. Insulin, for example, has been shown to help regulate mucosal growth, enzyme production, and influence villus size, resulting in improved absorption of glucose.

Three major immunoglobulins have been identified in the cow; IgG, IgA, and IgM. IgA molecules protect epithelial surfaces from bacterial colonisation, and IgM provide immediate, but short term, defence from infection. Immunoglobulins G are the most abundant, making up approximately 75% of immunoglobulin molecules and can be divided into two groups, IgG1 and IgG2. IgG1 is the principal IgG for providing passive immunity to the calf and is selectively transported from the circulation system to the udder. IgG1 acts on proteins, including viral proteins and toxins released by bacteria such as Clostridia for example. IgG2 is found in lower volumes than IgG1 and is responsible for acting against complex sugars (polysaccharides) which encapsulate pathogenic bacteria, such as Streptococcus.

At approximately four weeks of age, these maternal antibodies have declined significantly, and the calf is relying on their own developing immune response. This is when the calf is most vulnerable and disease causing pathogens will attempt to take advantage of this opportunity.

Pooling of colostrum should, ideally, be avoided, however, block calving can mean having large numbers of fresh cows on a daily basis making management difficult. If each collection of colostrum is tested before pooling, higher quality samples can be kept separate for new and compromised calves or stored for later use. Colostrum will keep well in the fridge for approximately 24 hours, or up to three days with an added colostrum preserver, such as potassium sorbate. Freezing is an easy way to manage colostrum stores, keeping

well for as long as 12 months, and if stored in bags of 2-3 litres the large surface area will mean freezing and thawing process will occur more evenly, reducing the risk of bacterial growth.

Poor hygiene during colostrum collection and incorrect handling and storage can dramatically increase the bacterial load. In adequate conditions, bacterial populations can double every twenty minutes, so proper cleaning of udders and sanitisation of test buckets and storage and feeding equipment is vital to minimise this risk.

Colostrum can also be safely heat treated by being sustained at 60°C for 60 minutes, which will maintain IgG levels while eliminating pathogens, and heat treated colostrum will store safely in the fridge for up to a week. Research has shown calves fed heat treated colostrum have an improved efficiency of IgG absorption, however, overheating can denature IgG proteins, so temperatures above 60°C should be avoided.

Calves will continue to benefit from being fed lower testing colostrum and transition milk after gut closure is initiated. Extended colostrum feeding and transition milk feeding can provide localised immunity within the digestive tract, as well as other valuable nutritional components, and has been shown to reduce the incidence of illness and scours. Bioactive components, such as oligosaccharides and hormones, are believed to stimulate development of beneficial gut bacteria and contributes to greater growth of villi in the small intestine for more effective nutrient absorption.

The concentration of IgG in colostrum has traditionally been considered the hallmark for evaluating colostrum quality, and using a Brix refractometer to test colostrum samples can give a reliable estimate of total proteins in colostrum. Calves are considered to have successfully received an adequate amount of IgG when blood serum concentration measures as a minimum of 10g/L, and the ideal time to test blood serum samples for passive transfer is 36-48 hours old. With approximately 75% of colostrum protein being immunoglobulins, a measurement of 22% on the Brix scale correlates with an IgG content of 50g/l. This has historically been

considered high quality colostrum, and it is expected that 2 litres, within 2-3 hours of birth, should achieve successful passive transfer of immunity for the calf.

However, there are a number of other factors, environmental, physical, and metabolic, that can have a negative impact on successful passive transfer. This, coupled with research that supports additional health and performance benefits of extended feeding of colostrum and transition milk, means there is considerable opportunity for many dairy producers to review and improve their colostrum management practices. Implementing monitoring to help identify and correct areas of the colostrum management protocols could have a significant impact on the future performance of the herd.

Feeding high quality, clean maternal colostrum is considered the gold standard, but colostrum supplements or colostrum replacers are extremely valuable, particularly for block calving herds, when fresh or stored colostrum is unavailable at the beginning of the season.

Supplements typically contain less IgG per dose and are only intended to supplement, not replace, existing colostrum. By comparison, colostrum replacer products are designed to be suitable as a complete replacement for maternal colostrum. They should provide a minimum of 100 g of IgG per pack and should also provide sufficient levels of nutrients to the calf to support metabolic needs in the first day of life but can also be used in the form of a supplement for poor quality colostrum.

These products can also be useful as a means of breaking the transmission cycle of pathogens, and is also useful for supporting compromised calves after a difficult calving or during times of illness.

Primestart® colostrum replacer contains high quality nutritional ingredients, including 100g of IgG, and a high fat content of 21% to provide your calf with plenty of energy, and is produced from high health herds free from by IBR, EBL, TB, and Johne's disease.

If you would like to know more about this, and other products available, please contact your local LIC representative.



Sneak peak into 2024

TITI MAX IMPACT S2F - F15 J1



gBW \$350

If production, capacity and good udders are key traits on your sire selection, new graduate Impact should be first choice in your bull team. His production gBVs are 748l of milk, balanced with 5.1% fat and 3.8% protein, he is a fabulous all-rounder and gives you the best of both worlds. Great fertility at +3.4% with good capacity to boot. An outcross sired by Bothwell WT Maxima, he produces well rounded, solid daughters with great udders. Impact is well suited to both autumn and spring block systems, bringing strength and durability to your herd.

OKURA PEPPER LUCCA - J16

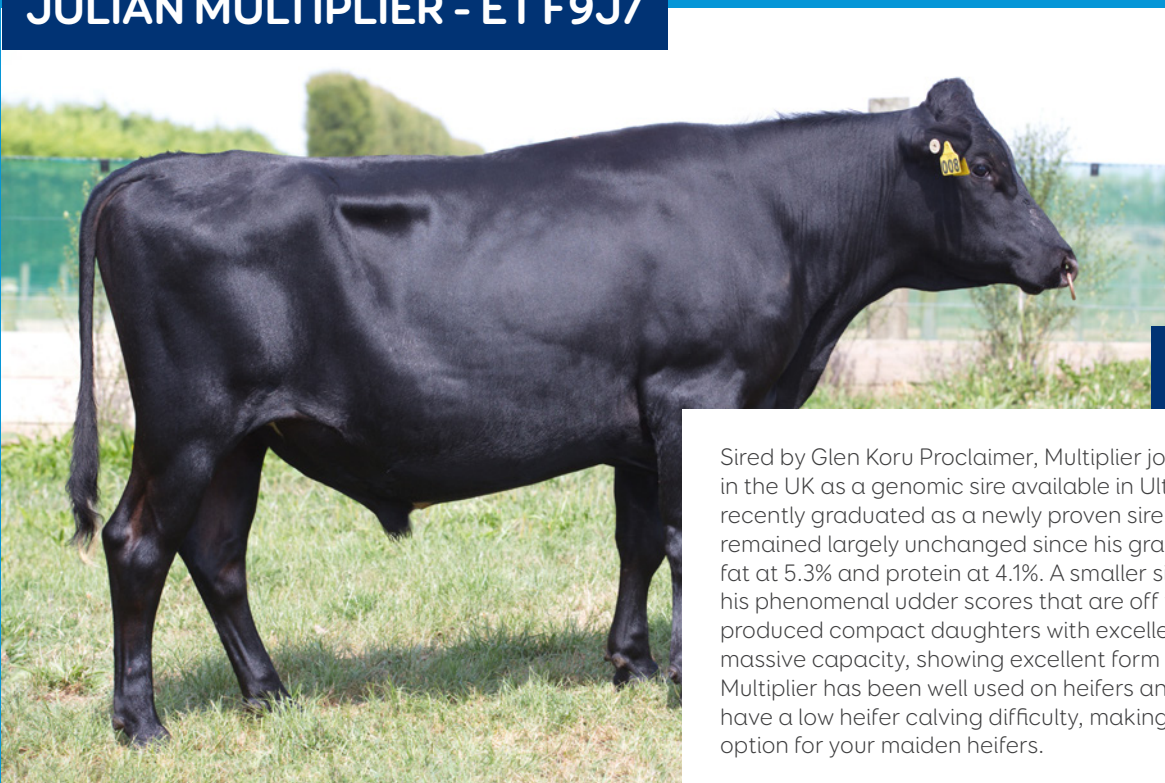


gBW \$511

Lucca's maternal grandsire is a household name when it comes to jersey sires - Okura Integrity. Integrity has been well used in the UK. Now we have one of his premier well-proven sons to add to your bull team. With fat at 6% and protein at 4.2%, using Lucca will drive milk constituents but maintain a decent volume, reducing liveweight and increasing efficiency in your herd. With low SCC and positive fertility, he will produce fertile, capacious and healthy daughters that easily adapt to milking life. Our TOP trait assessors have a high overall opinion of Lucca daughters, making him an excellent choice to use as a first cross against high yielding Holsteins that need a fertility and constituents' boost.

DEANS PROFESSIONAL - J9F7**gBW \$346**

This exceptionally well-proven cross-bred sire has over 11000 recorded milking daughters in New Zealand. Longevity is in his blood as his dam has already completed 6 lactations, averaging 6800kg at 4.99% fat and 3.73% protein. This is reflected in his functional survival at a whopping 5%, his daughters are proving to be hardy and long-lasting. Professional's milk constituents are top of the class for this smaller sire at 5.1% fat and 3.9% protein, making him an excellent choice if you are looking to drive milk solids and maintain a strong but smaller animal. Suitable for both the spring and autumn herds.

JULIAN MULTIPLIER - ET F9J7**gBW \$416**

Sired by Glen Koru Proclaimer, Multiplier joined our ranks in the UK as a genomic sire available in Ultraplus™, he has recently graduated as a newly proven sire. His proof has remained largely unchanged since his graduation with fat at 5.3% and protein at 4.1%. A smaller sire who, with his phenomenal udder scores that are off the chart, has produced compact daughters with excellent udders and massive capacity, showing excellent form and conformation. Multiplier has been well used on heifers and has proven to have a low heifer calving difficulty, making him an excellent option for your maiden heifers.

Reliability - there is no I in Team

Don't overlook reliability when assessing whether young bulls will fulfil your breeding aspirations. What does it mean, and just what kind of impact does it have?

Jayden Calder, LIC herd improvement analyst

At mating, the choice of bulls to sire the next generation of replacements is many and varied: daughter proven or genomic? This bull, or that bull? A team of five bulls or of ten bulls? All decisions require a level of trust in the quality of animal evaluation information that sits behind bull selections.

The engine room of LIC's bull selections is the LIC genomic evaluation model, which had its most significant recent update implemented in February 2020. Since then, both the number and quality of genotypes used for genomic evaluation has significantly increased, leading to better estimations of genetic merit. The use of genomics has enabled for widespread use of bulls at a young age, years before the bulls' daughters have information of their own (e.g., milk records).

While this reduction in the sire generation interval has huge benefits for increasing rates of genetic gain, it's important to not lose sight of the practical application of bull teams on-



farm; more specifically, the reliability of gBW and the appropriate use of a team of young genomic bulls.

For all traits, reliability is measured on scale of 0 to 100%, and indicates the confidence that an animal's gBW (or individual breeding values) are a measure of their true merit. The breeding value for each trait has an associated reliability and will change over time with the addition of more information from sources like ancestry and daughter information.

The gBW index is a combination of breeding values and economic values for 10 traits that have measurable economic value to New Zealand dairy farmers. Changes to gBW are not limited to the addition of new information; factors such as economic value updates and model changes also influence gBW changes. Ultimately, changes to gBW provide a more accurate ranking of bulls on their expected ability to breed profitable and efficient replacements, while reliability of gBW serves as a useful indication of the amount of information behind the estimate.

Without a genotype, a young bull will have a gBW that represents his parent average genetic merit and will carry a gBW reliability of 30-40%. At this early age it is not known whether the bull received a 'favourable' or 'unfavourable' combination of genes from sire and dam.

Cue the value proposition of genomics:

Take the same bull and add the information from his own genotype and the gBW reliability will increase to around 50-60%. At this level of reliability, movement in gBW is still expected once daughter information is obtained for a young genomically-evaluated bull. However, the accuracy of this early genomic prediction provides a far greater estimate of lifetime genetic merit over and above what can be obtained through parent average information alone.

What does this mean for bull selections? Putting all your eggs in one basket, by choosing only a couple of young genomic bulls, opens the door for differences in team gBW expected vs team gBW delivered. But this should not deter farmers from selecting young genomic bulls, as early access to these genetics is an opportunity to get ahead of the pack. Picking an adequate number of bulls means that the team gBW delivered will match the team gBW expected, smoothing out any upward or downward movements in gBW at an individual bull level. Finding the sweet spot between gBW gain and target number of bulls will ensure that the risk versus reward is balanced appropriately, while maintaining genetic diversity across the herd.

The team approach is a non-negotiable principle to a balanced breeding approach which should always be considered at the time of making bull selections. Getting the balance right will manage the potential variation at an individual level, while breeding the best cows for your herd of the future.

SPECIAL FEATURE: NEDAP COLLARS

Benefits of PrecisionCOW collars at Bampfield

Josh Thorne and his father Neil, run a 260 spring block herd at Bampfield, near Barnstaple, North Devon. The New Zealand grazing cows achieve 5800L and 485 kgMS per lactation. Last spring, Neil and Josh installed the PrecisionCOW Technology activity collars and haven't looked back since.

A key aspect in the decision to install the collars was to reduce labour hours, as mating time in a block calving system can be very intensive. They also wanted to remove their reliance on stock bulls and mate the entire herd to AI beef and sexed dairy sires. They were able to save time and money on tail painting and field bulling checks. Their herd health is also benefiting from the installation as the collars have flagged animals that have reduced rumination, enabling them to spot cases of mastitis and lameness 24 hours before the symptoms become visible. This has resulted in faster treatment times and higher cure rates.

Josh said it has also increased his feeding accuracy. If the cows have been underfed, the collars alert the user that the herd rumination drops, which means he is able to rectify the situation before



any impact in production can be seen later at milking time.

They are expecting to see further benefits next mating season when the collars will be on for calving and pre-mating. Flagging non-cyclers and cows with ill health will create opportunities for targeted treatments only where necessary, with the potential to result in an overall reduction in antibiotic use and vet intervention.

With great fertility results at 84% 6 week in-calf rate, and 8% empty rate for the 2023 mating period, these figures are on par with previous years. However, they

were able to reduce their mating block by one week in just the first season with the use of the collars, and did not use any stock bulls in the milking herd. They achieved this despite a difficult mating period during a wet April and May with slow grass growth, an unseasonably warm June, and an average day time temperature consistently around 23 degrees celsius, and sometimes higher.

The research into heat tolerance by LIC New Zealand, has shown that a cow's fertility is affected at temperatures higher than 22°C, along with seeing less activity in hot or very cold weather. This makes it even more important to get heat detection right in these conditions to ensure fertility results are not adversely affected.

They have both found the user interface easy to navigate, and are currently not using any other farm software, but did add that they were looking into UNIFORM-Agri which could link directly into the Nedap system, to tie everything into the one platform.

When asked, Josh didn't hesitate recommending the PrecisionCOW Technology activity collars to other farmers who value their time.

"It's like having another half a labour unit at key times of the year."



SPECIAL FEATURE: NEDAP COLLARS

Llysun Farm invests in PrecisionCOW Technology



Morgan Tudor who farms Llysun Farm in Llanyrfel, near Welshpool tells us how a newly installed Nedap Collar and 2-way automatic shedding gate has benefitted his 400-cow spring block grazing herd.

In 2016 Richard Tudor won Beef Farmer of the year and the following year embarked on a Nuffield Scholarship looking at soil health, which led to the decision to switch from sheep and beef to dairy on the family farm. In his youth, Richard worked in New Zealand as a shepherd at Mount Linton Station in Southland. But it was on his later travels with the Nuffield Scholarship that convinced him of a switch to a grazing dairy system as the preferred direction for the family business.

Richard and his son Morgan sold the 140 suckler cows and bought 350 LIC bred dairy calves locally in 2018 with the plan to rear them through so they could reduce costs on buying in-calf heifers and have control over their rearing. Meanwhile, they began transitioning the farm, and by 2019, the sheep were sold, and their heifers were in-calf ready for a spring calving in 2020.

Richard entered into a short-term joint-venture with Rhodri Jones next door who was also in the midst of a conversion and between the two farms they ran 550 cows. Tragedy struck when Richard was sadly fatally injured in a farm accident during the first calving in 2020, leaving Morgan to carry on with



the plan for the family farm. Despite the sad turn of events and the challenges it posed, Morgan and Rhodri persevered with the venture and by December 2022 both farms were ready to run their own businesses respectively.

Morgan has utilized an LIC AI Technician since 2020 and have done their own heat detection using tail paint and scratch patches. He initially thought that activity collars were aimed more

at high input herds and hadn't realised the potential they had for his system. Emyr Brown, his LIC Farm Solutions Consultant brought up the possibility for Morgan and it seemed an ideal solution for saving on labour costs. Morgan has two part-time staff members that split the week between them and one full-time staff member for 6 months of the year, who shears sheep in the summer in the UK and then in New Zealand for the main shear during the UK winter. He made the most of the available agriculture grants in Wales, where he got a 40% rebate on the cost of the collars and the Nedap 2-way automatic shedding gate.

Morgan's parlour is a DeLaval 50-point rotary, and previously at mating time he would have to stand around every morning for six weeks to heat detect and shed the bulling cows (and pay someone to milk for him while he did that!). Now, the heat detection and shedding is automatic thanks to the technology so he can focus on the milking. He also said the technology is monitoring the cows 24/7, "It's constantly watching the cow isn't it, I only see them twice a day."

Morgan chose the IFER4 model and found the rumination useful at calving time for monitoring health issues in calving and newly calved cows. However, he uses the rumination less now that calving and mating is over due to the type of cow he has. They have few issues with ill health at that time of year, so there are no problems for the collars to find. He went on to say that if there is a cow not looking right, he can confirm that with the collars, "You look them up and that also tells you that she's not right". It provides additional accuracy around the health of animals.

Morgan felt he didn't have an ideal mating period with TB testing in the middle. A dry, warm June exacerbated matters on farm, where many of the fields are steep and burn off quicker





than lower ground. This was highlighted in a number of animals that scanned in-calf in the first PD, then had lost the pregnancy by the final PD. Despite this, they have maintained a 10% empty rate, which is on par with previous years.

Having the gate installed has added an ease of management aspect to his business, not just at mating time, but streamlining basic stockmanship. When a lame cow is noticed in the field or on the walk to the parlour, its number can be entered into the software and the gate will automatically draft her off when she exits the parlour. This removes the risk of missing her once milked and she can be treated in a timely manner which will improve her recovery time.

The transponder has been placed on the shed at the entrance to the rotary and Morgan has never had any issues with the technology keeping up with milking time. Morgan says that it takes 20-25 minutes from the first cow into the collecting yard, to the first animal leaving the rotary and it has never missed drafting a bulling animal.

Morgan says that next season, there will be further benefits on farm. These enhancements include automated pre-breeding heats and the capability to identify non-cycling cows promptly, allowing for timely intervention and



subsequently improving his 3-week submission rates. It will provide him with early in-calf data before pregnancy dating, he says "If you get to the end of nine weeks and there's not many bulling, then that's ideal, you can stop breeding." This means there's potential for Morgan to tighten his block in this way.

He finds the app easy to use and says that it's a lot easier than the Genus app, "it's simpler". Cow side data input means data can be inputted and feeds directly into UNIFORM and the drafting gate, removing the need for paper notes that can be lost, or simply forgetting to input the data after the event. The app can have multiple users, allowing the whole team to enter any relevant data about the cow.

The desktop software is also easy to use allowing Morgan to quickly pick it up and interpret the data.

Morgan has built up a successful business in a relatively short time, already reaching fertility and grazing KPI's with his young herd. He has enhanced his business with the addition of the Nedap collars and shedding gate and is expecting to see even more benefits in the 2024 season.



SPECIAL FEATURE: NEDAP COLLARS

Elevate your farming with PrecisionCOW powered by Nedap (seen at Bampfield)

When I first met Neil and Josh of Bampfield Farm, they were keen to impress on me that they were already achieving good heat detection results. They were eager to determine if PrecisionCOW technology, powered by Nedap, could match these same results. Their primary motivation was to save costs by reducing labour, and potentially reduce or eliminate the need for bulls on the farm. Additionally, they were eager to maintain and ideally improve the health and fertility performance of their herd.

Neil and Josh were curious about how the system would function in real-world conditions within a block grazing system.

Heat and health behaviour data stored on the collar starts to be gathered when the cow gets within range of the antenna. Data stored on the collar is transmitted to the collector station. The Nedap system is scalable to meet the needs of any dairy farm size, but commonly only requires one collector station and reader to gather and process the information. It is possible to gather data with as little as fifteen minutes of sight per day. For this reason, we can avoid the need for multiple repeater stations in many cases.

After carrying out a site survey at Bampfield Farm we chose to site our antenna and collector station at a high point on the main shed. From this point, range could be established throughout the winter housing area, the collecting yard and the tracks that lead to the grazing block. From a practical point of view, it also allowed us to connect the collector station to the sorting gate which is now fully installed and will play a bigger part in the management of the system next season. A wide range of flexible separation rules are available to catch the cows that you want. For example, setting a separation rule to draft all cows on the heat detection list allows you to employ relief staff without having to worry about their heat detection skills. Cows can be drafted, and accurate breeding decisions can be made by managers at the end of milking.

The same flexibility applies to the server-based interface which can be remotely accessed from wherever you are. This allows for you to have eyes on your cows 24/7, keeping on top of health and fertility issues as they emerge. This applies to the management of the herd, groups, and individuals. An easily readable dashboard shows individual heat and health attentions and also



group alerts. Individual attentions draw you to the animals that need immediate management, and the group alerts can draw attention to changes in the amount of time spent eating. In a grazing scenario this can be an indication of sub-optimal grazing cover. An example of this occurred in the south of the UK this year, when cows displayed an increase in eating time accompanied by a decrease in resting time and decline in rumination. Observing this pattern along with monitoring grazing cover, provides the farmer with an opportunity to introduce low levels of supplementary feed earlier and protect the wedge, thus avoiding running covers too low.

It was through the observation of the animals by checking their data regularly, that helped Josh identify early changes in eating, rumination and inactivity drawing attention to mastitis cases much earlier. The same alert will

draw attention to a wide range of health issues, all of which can be checked for by automated drafting.

PrecisionCOW powered by Nedap is a powerful and reliable technology which is seeing a rapid uptake from the block grazing sector. A robust system delivering good results, Nedap provides the ability to manage large numbers of animals with minimal hardware, while also addressing the issues surrounding skill shortages in the dairy sector.

Neil and Josh have identified and embraced the benefits that the PrecisionCOW technology offers, and this plays a significant part in getting the most from their investment.

Solo trip set to broaden horizons

Thanks to a chance opportunity she was given at just 16 years old to work on a farm, and with aspirations to run her own dairy farm one day, Bethan Dunn eagerly awaits her trip to New Zealand for invaluable farming experiences, to gain knowledge and progress her future in agriculture.

The now 19-year-old Bethan was born in Luxembourg but moved to the UK at the age of six and has spent most of her life in the Welsh village of Tudweiliog, a close community connected by agriculture.

Although not from a farming background, Bethan's love for animals had been apparent since she was young and with the intention of pursuing this passion, Bethan attended a local agricultural college for her A-Level years to undertake a course on animal welfare. But after a month at the college, it was evident the course was not all she had hoped for and she reached out to a friend who milked for a local farm that produced their own ice cream.

She says: "I went to the farm for one milking and really enjoyed it, so I asked around other local farms to see if anyone was looking for a worker - there was not much interest, but then Matthew gave me a week's trial and I have been there ever since."

For the last four years Bethan has worked full-time on one of Matthew Jackson's farms, located on the Llyn Peninsula, Wales, carrying out all the day-to-day tasks including: milking, calf-rearing, checking youngstock, moving the heifers around paddocks and outwintering on kale.

There are 330 cows in the milking herd, which block calves in the spring and utilises a New Zealand-style system. The base cow is LIC-bred and the herd comprises of Holstein Friesian-Jersey cross, Friesian and Jersey animals.

They produce about 100 replacements per year with the heifers being bred to sexed semen, and many of the others being bred to beef sires.

Bethan also does a lot of tractor work including spreading fertiliser, carting silage and slurry spreading.

"I love being outdoors doing something

different most days, the variety of activities is challenging, and it keeps you going - each time you do something you want it to be better than the last time you did it," she says.

"I am always trying to better myself, especially when I am working with people who are better than me."

In June 2024, Bethan will set off on a solo trip to New Zealand in pursuit of experience on real dairy farms with the intention of gaining useful insights to bring back to Tudweiliog.

She says: "I wanted to go to New Zealand because it is a completely different working environment, and it seems to be the place everyone goes to learn and come back to take on a better role."

Bethan will spend six months working for Mike Murphy near Cambridge on the North Island in the famous Waikato region.

The farm milks 700 mostly LIC-bred, Jersey cows and her role will include milking, calf rearing and general farm work. But Bethan also has the intention to learn more about grass measuring and budgeting.

"In my current job I just do what needs physically doing on the farm, but I want to learn more about the paperwork and the movements.

"I have also only ever milked in a herringbone parlour, whereas I would like to gain experience on a rotary - I want to know everything and learn as much as I can and come back with a different perspective," she says.

"I am quite scared of moving across the world on my own, getting there and not knowing anyone. It will be completely out of my comfort zone because I have grown up with everyone here. It will be quite a challenge to make myself get to know new people."

Bethan hopes her trip to New Zealand will not only help her succeed and progress in her current role on Matthew's farm, but she hopes it will help set her up for her ultimate dream - to run her own farm.

"One day, a few years from now, I want to be able to have my own farm, milk my own cows and rear my own youngstock, or be managing somewhere on my own," she says.

Bethan will return in January 2025, ready for the UK calving season. So keep an eye out for an update on her travels and what New Zealand has taught her in the next edition of Grassroots.



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