



BEEF DAIRY



2026 Report

**Beyond the Breed:
Unlocking Australia's
Beef-on-Dairy Potential**

Presented in
partnership with
McDonald's



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Contents



4 About this report

5 About FMG Global

THE OPPORTUNITY

8 Beef-on-dairy building for growth

16 Pilot project proves the potential

20 Beef-on-dairy an exceptional product

26 Beef-on-dairy a verifiably low-emissions product

THE SUPPLY CHAIN

32 Sustainable supply gives processors the edge

38 **Case study** – Why this processor is embracing beef-on-dairy

42 **Case study** – Beef-on-dairy helps build a UK giant

48 Unlocking the feedlot potential

54 Exploiting the grassfed premium

60 Calf rearers a key link in the chain

64 **Case study** – Australian calf rearer: Circular Head Farms

66 **Case study** – UK fully integrated model: Buitelaar

67 **Case study** – US calf-rearing nutrition program: Land O'Lakes

THE DAIRY FARM

70 It all starts on the dairy farm

76 **Case study** – Why this farmer is embracing beef-on-dairy

BUILDING BLOCKS

82 Robust Relationships

86 Nailing Nutrition

90 Great Genetics

94 A+ Animal Welfare

98 Detailed Data

CONCLUSION: BEYOND THE BREED

106 References & further reading

About this report

Beef-on-dairy is rapidly evolving from concept to commercial reality. What began as an opportunity to better utilise the dairy herd has become a strategic supply pathway delivering productivity, resilience and long-term growth for the beef industry.

Across Australia and internationally, practical experience is shaping how businesses assess beef-on-dairy. Pilot programs have demonstrated commercial viability. Performance data is validating outcomes. Genetics, nutrition and welfare systems continue to advance. Processors, feedlots, rearers and dairy farmers are identifying new opportunities to unlock value.

This report brings those insights together.

FMG Global has played a central role in co-ordinating this work by leading McDonald's first Australian Beef-on-Dairy Pilot Program, facilitating on-farm practice change, performance measurement and data analysis, connecting supply chain partners and aligning global market specifications of beef quality directly with Australian dairy farmer processes. Rather than viewing beef-on-dairy as a single initiative, FMG Global has supported a whole-of-supply-chain approach, from on-farm decisions through to beef processor performance.

This report reflects shared industry experience, drawing on commercial pilot results, verified low-emissions data, international case studies and perspectives from every link in the supply chain – from dairy farmer and calf rearer through to feedlot, processor and end customer.

By bringing credible data, case studies and industry perspectives together, this publication is designed to support informed decision-making and broader industry participation. Transparency, collaboration and measurable performance are building confidence in beef-on-dairy as a scalable and commercially viable supply pathway.

This work aligns with McDonald's long-term supply strategy by strengthening resilience, assuring supply and improving animal health, welfare and sustainability outcomes while bringing benefits all along the value chain.

Beef-on-dairy represents more than a production shift. It reflects a more integrated approach to protein supply, where evidence-based decisions and strong partnerships drive performance.

About FMG Global



FMG Global is proud to support and lead this work in Australia, helping translate insight into action and positioning beef on dairy as a credible pathway for future supply growth.

FMG Global is McDonald's strategic raw material partner – sourcing, buying and managing the movement of approximately 1.5 billion pounds of raw material globally each year. Through a globally aligned model, we connect McDonald's with raw material suppliers, further processors and industry partners to deliver assured supply, cost competitiveness, disciplined risk management and long-term value for the McDonald's system. Our role extends beyond procurement – we help shape supply chain strategy, unlock innovation, focus on food safety and quality assurance, and sustainability.





The Opportunity

Australia's beef-on-dairy sector is poised for expansion. The foundations for growth are in place, including rapidly improving beef genetics designed for dairy systems, advances in genomics and sexed semen and booming growth overseas.

Beef-on-dairy building for growth

Why this is important:



Foundations in place for Australian beef-on-dairy sector to grow



Genetics rapidly improving to create a superior product



Offers genuine opportunity for lower greenhouse gas emissions intensity, without offsets



Work underway to unlock supply chain connections

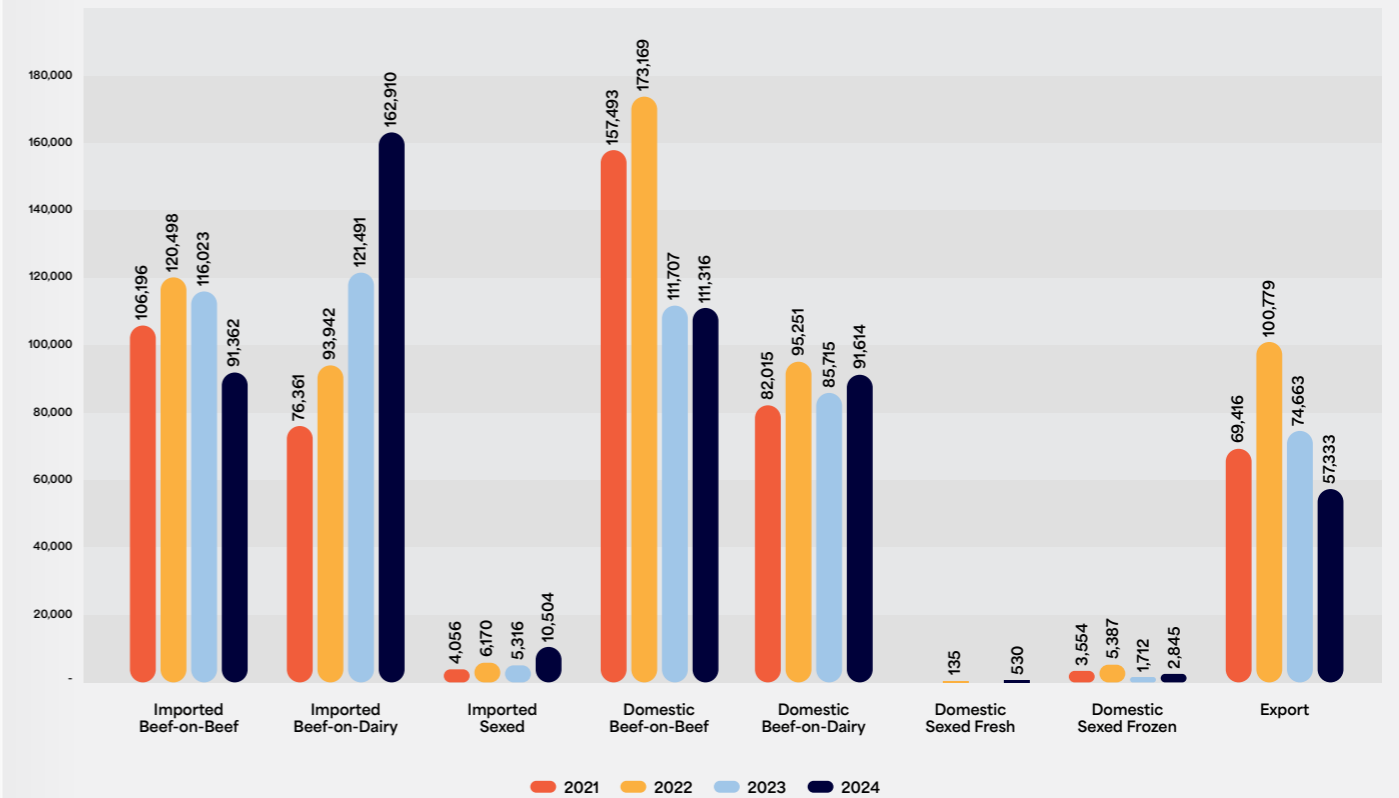
For Australian companies facing mandatory climate reporting, beef-on-dairy offers a proven pathway to lower greenhouse gas intensity. Pilot programs have shown the sector can succeed here. With support from global brands and the beef and dairy industries, momentum is building.

But there are challenges. Due to the relative size of Australia’s beef and dairy herds, its meat-processing sector is more beef-focused than those of European and American meat processors. There is no clearly defined supply chain, resulting in a disconnect between dairy farms and grow-out operations. Calf-rearing infrastructure for surplus calves is limited. These structural challenges are explored in depth in the supply chain section of this report.

Momentum builds

Interest is growing in developing the beef-on-dairy sector in Australia. McDonald’s has backed an ambitious project led by its procurement management company, **FMG Global**, to grow the sector. The goal is to lift annual processing to 100,000 beef-on-dairy animals by 2030. It is being run on the back of a successful 2022–24 pilot program. Building resilience across the supply chain is a central driver of McDonald’s

Beef Doses: Domestic and Import, Export Years: 2021, 2022, 2023, 2024



Source: National Herd Improvement Association of Australia 2024 Semen Market Survey

investment in beef-on-dairy. By strengthening the long-term viability of dairy farmers, McDonald’s is also creating greater certainty and stability in its own beef supply.

Andrew Ralph, strategic sourcing manager with FMG Global in Australia, says the focus is on building visibility and confidence into the system. “We’re laser-focused on these first 100,000 head,” Mr Ralph says. “That equates to approximately 10,000 metric tonnes of high-quality beef

trimmings coming into the McDonald’s system. For us, it’s an assured supply we can see two years in advance – and that creates resilience.”

The resilience begins on farm. Through beef-on-dairy, dairy farmers gain reliable markets for their calves, while processors gain confidence in future supply volumes. “With beef-on-dairy, the opportunity we see is in these collaborative supply chains that we’re developing,” Mr Ralph says.



Andrew Ralph, FMG Global – Strategic Sourcing Manager



Andrew Brazier, McDonald’s – Global Supply Chain Director

“With beef-on-dairy, the opportunity we see is in these collaborative supply chains that we’re developing.”

Andrew Ralph, FMG Global

“The dairy farmer knows there’s a market for their calves, and the processor at the other end knows that, say, 5,000 head of cattle are coming down that supply chain – that’s 5,000 head of cattle they don’t need to go into the open market for.”

Andrew Brazier, global supply chain director with **McDonald’s**, says certainty underpins both supply security and sustainability outcomes. “One of the key opportunities we’re really keen to explore is assured supply – getting those animals into the system rather than seeing them culled early or not reaching their full grow-out potential,” he says.

“The other part that’s really exciting is that the beef-on-dairy animal naturally has a lower greenhouse gas footprint.”

For McDonald’s, the program extends well beyond the domestic market. Australian beef is sold globally, making supply resilience and sustainability interconnected priorities. “It’s in our best interest to do this,” Mr Brazier says. “What’s critical for us is having systems in place that allow verifiable lower-emissions claims right through the chain – from genetics, through nutrition, to the farmers, to us, and ultimately to the consumer.”



Dr Sarah Bolton, University of British Columbia – Veterinarian and Animal Welfare Scientist

Dr Sarah Bolton, a veterinarian and animal welfare scientist based in Canada at the **University of British Columbia’s** Animal Welfare Program, brings a particularly well-rounded perspective to the Australian opportunity. She completed a Nuffield scholarship in 2018 on surplus calves in the dairy industry and subsequently worked for Australian beef processor Greenham to help develop its beef-on-dairy supply chain. She sees beef-on-dairy offering clear advantages to the beef industry. “The first is being able to purchase or bring in lower emissions intensity inputs,” she says. The other is helping some beef producers better manage climatic volatility by tapping into a sustainable supply of animals. “For some producers, that’s going to eliminate or reduce the need for investment in a beef breeder herd, which is a big capital investment in the face of increasing climatic volatility,” Dr Bolton says.

But she says the dairy industry must produce the right kind of animal for the beef sector. “The onus is really on the dairy industry to present a viable opportunity to the beef industry. And I think that starts with understanding what the beef industry wants and being able to present a product or an animal that is viable in some way. Then, when you have interest from the beef industry, you can start to build closer connections.”

Overseas growth

Beef-on-dairy is booming around the globe. A **Rabobank** report – *Beefing up global dairy with dairy-beef* – released in October 2025 says the strategic integration of beef genetics into dairy herds has been gaining momentum globally, driven by economic, environmental and ethical considerations. “Dairy-beef is emerging as a timely solution to global protein demand, ethical scrutiny, and climate pressures – making strategic integration not just beneficial, but potentially essential,” report co-author and RaboResearch senior agricultural analyst **Emma Higgins** says.

American Farm Bureau Federation economist **Daniel Munch** reported in February 2025 that 72 per cent of US dairy farms were now incorporating beef genetics into their breeding programs, enhancing the marketability of dairy-origin calves by improving carcass quality and feed efficiency. Most were receiving a premium for beef-on-dairy calves compared with pure-bred dairy calves. Beef-on-dairy was now a key driver of the US supply of both beef and dairy cattle.

Laurence Williams, director of the beef value chain for **Land O’Lakes**, says beef-on-dairy calf prices in the US have seen significant increases, with day-old calves fetching as much as



Laurence Williams, Land O'Lakes – Director of the Beef Value Chain

US\$1,750 in late 2025. “If you can get that calf to harvest, develop them properly, they are very profitable on the rail,” he says.

According to the **Agriculture and Horticulture Development Board**, dairy beef now makes up 37 per cent of Great Britain’s prime cattle supply. **AHDB** senior livestock analyst **Becky Smith** says registration data from the British Cattle Movement Service indicates this proportion will continue to grow in the coming years.

Foundations for growth in Australia

The Rabobank report pointed to changes in the Australian dairy industry as a key driver. “With over one million calves born annually and limited herd expansion, the number of replacement animals required each year is constrained,” Ms Higgins says. “Around 40 per cent of calves are retained as heifer

replacements, leaving a significant surplus. Many of these underutilised calves still enter the four-to-five-day-old calf market, for slaughter.”

Technological and genetic advancements in dairy herd management over the past 15 years have increased opportunities. Genomics has largely addressed a fertility issue in Holstein Friesian cattle and enabled the early identification of top-performing animals in dairy herds. Improvements in the quality of sexed semen have made it a more reliable product. Combined, these have allowed dairy farmers to reduce the number of cows bred to produce replacement heifers, allowing more to be bred to beef semen.

The National Herd Improvement Association of Australia (NHIA) 2024 annual report revealed total dairy semen sales have been gradually declining – down to 1,642,517 doses in 2024 from a peak of 1,932,516 in 2018. Although sexed semen sales were down slightly to 549,872 doses, they were significantly higher than the 178,468 doses sold in 2018. The report revealed 473,181 doses of beef semen were sold. It also revealed the big lift in imported beef-on-dairy sales – from 76,361 doses in 2021, when NHIA first started capturing the data, to 162,910 in 2024.

Jo Holloway, national key accounts and solutions manager with genetics company **Semex** in Australia, says there’s been a huge change in the past five years in the numbers of dairy farmers using beef-on-dairy semen across part of their herd. “I would say five years ago the early adopters were probably on it, and now I would say 75 per cent of the people I deal with are using beef in some fashion,” he says. Semex Australia sold 5,700 doses of Angus semen in 2021. In 2025 that had risen to 60,000 doses.

Photo courtesy of Semex.





Jo Holloway, Semex – National Key Accounts and Solution Manager

The quality of beef-on-dairy genetics has rapidly increased in that time, driven by the North American markets. **Dr Matthew Cleveland**, senior director global bovine sustainability with US-based genetics company **ABS**, says initially beef-on-dairy genetics were aimed at what dairy farmers wanted – calving ease, high fertility semen and a black coat to attract a premium from beef buyers. As the beef-on-dairy market grew, semen companies emptied their tanks of any Angus semen they thought might work.

But the genetics companies realised the largely homogenous Holstein herd offered an opportunity to build genetics specifically for the beef-on-dairy market, selecting for muscling, feed efficiency and carcass quality. “We started building genetics that were focused on whole chain profitability,” Dr Cleveland says. “And so we’re making really rapid progress. I already see the animals we’re



Dr Matthew Cleveland, ABS – Senior Director

creating today as being much better than the animals we were creating 10 years ago. I would argue that they are better than average native beef genetics. They’re definitely in the top end when it comes to feed efficiency and carcass quality.”

Australia’s growing export beef industry also provides an opportunity. According to **Meat and Livestock Australia**, the national beef cattle herd was stable at about 31 million head in 2025, after a significant rebuild in prior years. A slight decline is forecast for 2026/27. Australia produced a record 2.87 million tonnes of beef, driven by stable carcass weights and increased slaughter. **MLA** says beef exports will remain strong as Australia continues to fill the global supply shortage.

Ms Higgins says Australia’s expanding feedlot sector could be an opportunity for dairy-beef.

“I already see the animals we’re creating today as being much better than the animals we were creating 10 years ago. I would argue that they are better than average native beef genetics.”

Dr Matthew Cleveland, ABS

“Over the past decade, cattle on feed have increased from 900,000 to over 1.5 million head. Grain-fed cattle now account for 38 per cent of slaughter, up from 32 per cent. While the bulk of the feedlot capacity is not in dairy states, the availability of infrastructure, skill sets and feedgrain present opportunities that countries such as New Zealand with low feedlot capacity do not have access to.”

The five building blocks for growth:

- Robust Relationships**
- Nailing Nutrition**
- Great Genetics**
- A+ Animal Welfare**
- Detailed Data.**

Pilot project proves the potential

Why this is important:



Pilot program runs from 2022 to 2024



1,562 cattle through four pathways



Grew premium product for target markets in Japan, China and the Middle East and the domestic Australian market



Important learnings for future supply chain development

McDonald's invested in a pilot led by FMG Global, run from 2022 to 2024, that set out to prove beef-on-dairy animals could satisfy premium markets across multiple pathways. This rigorous pilot program has already demonstrated what is possible in the Australian context.

Andrew Ralph from FMG Global says, "What we set out to do in building resilience was work with dairy farmers to pilot a new concept. Beef-on-dairy is about using high-quality beef genetics, specifically matched to dairy cows, to produce animals that perform well in a beef supply chain.

We weren't trying to produce animals and simply hope the market would respond. Instead, we took a strategic approach by aligning the right genetics with clearly defined market targets to prove that beef-on-dairy animals can meet the demands of premium markets."



"We wanted to prove that beef-on-dairy animals can meet the demands of premium markets."

Andrew Ralph, FMG Global

The pilot program put 1,562 cattle through four pathways:

- P1 – 100 per cent grassfed
- P2 – free range grainfed
- P3 – grass background to traditional grain feedlot
- P4 – 100 per cent grainfed, replicating what happens in the United States

Target markets were Japan, China and the Middle East for higher-marbling products, and the domestic market in Australia for lighter animals.

“Essentially, what we’ve proved throughout the pilot is that we can satisfy premium markets, whichever one we’re targeting,” Mr Ralph says. “The quality is obvious, the muscle texture is very fine and it eats well for every market that we targeted.”

The pilot project also incorporated a data platform to capture whole-of-life performance data for process improvement and traceability.

The pilot project:



Delivered an additional **124 MT of trim** for McDonald’s, unlocking opportunities to **increase Australian trim availability by 10%**



Helped generate a **60% increase** in the Australian dairy sector’s adoption of superior Angus genetics. These superior beef genetics **improved fertility, productivity** (yielding more milk from each cow) and **premium meat quality** from the beef-on-dairy calves.



Reduced morbidity and mortality on pilot farms by 99% by establishing protocols for gold-standard colostrum delivery, health and welfare procedures.

Crafting high-quality beef from the dairy supply chain

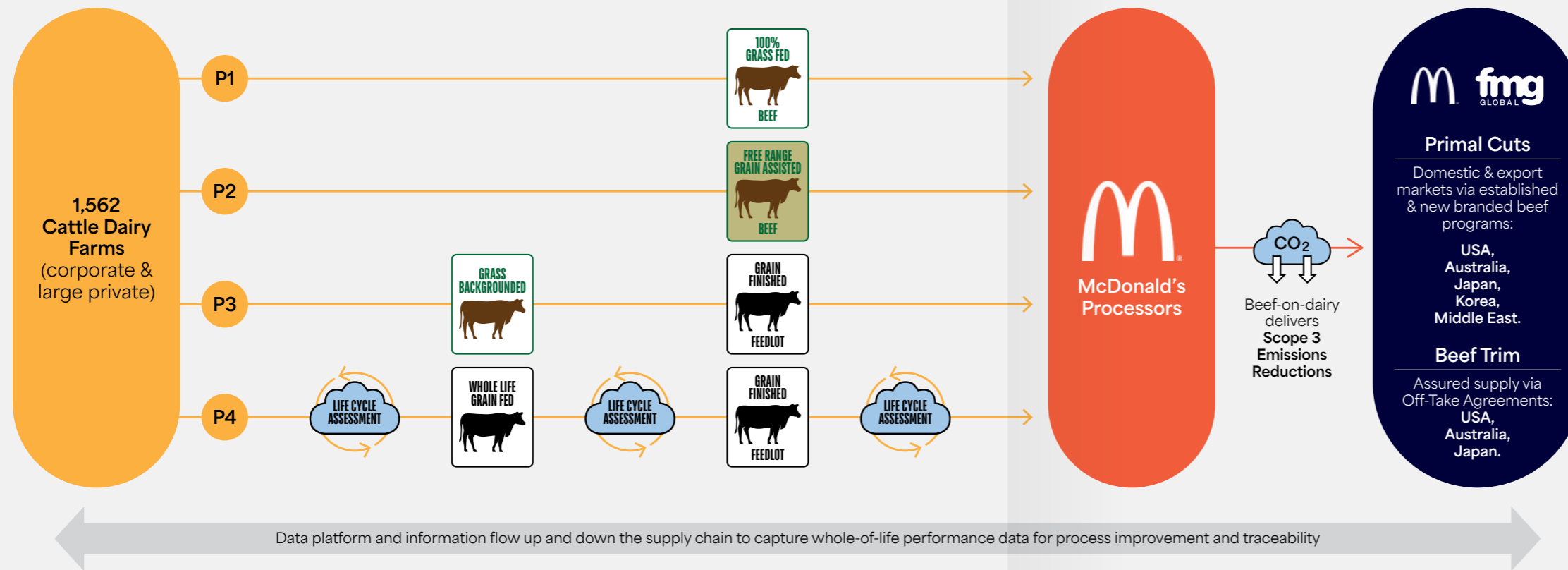


Image of beef-on-dairy marbling example.
Photo courtesy of Harvest Road.

Beef-on-dairy an exceptional product

Why this is important:



Beef-on-dairy achieves excellent eating quality



Research reveals consumers rate it higher than conventional beef for tenderness and flavour



High marbling positions it for premium export markets

The pilot program validated more than supply chain logistics – it confirmed what research and overseas market experience had already begun to show: that beef-on-dairy, when produced through a planned, intentional system, consistently achieves excellent eating quality, strong marbling and reliable carcass performance that meets the expectations of premium markets.

Research and market experience show that consumers rate beef-on-dairy highly for tenderness and flavour, often matching or outperforming conventional beef. The combination of selected beef genetics, controlled nutrition and

the consistency of dairy herds allows beef-on-dairy processors to produce a uniform product for multiple markets. Far from being a secondary product, it is increasingly recognised as a quality-driven beef offering in its own right.





Ian Wheal, Breedr – CEO

Dr Bolton says “I think dairy breeds have very unfairly earned a reputation of being low-quality meat. The reality is that dairy breeds marble a lot. So when we use strategic cross-breeding to improve growth and performance throughout the animal’s life, improve carcass conformation and improve yield, we’re then pairing a higher growing, higher yielding beef sire with a dam that marbles really well, and quality is almost always a huge advantage for these animals.”

FMG Global small-scale trials with beef-on-dairy animals finished both in the feedlot or on grass showed they grade well, **consistently scoring 63 and higher on the Meat Standards Australia index.**

Ian Wheal, founder and CEO of **Breedr** – an agritech company helping develop beef-on-dairy supply chains in the UK and US, points to similar results in the US. “These animals grade better than anything else. They grade consistently because you’ve got a genetic herd that is so much less diverse that produces the same animal all the time. They marble better and perform well in shear force testing. And so if you’re in a market where eating quality is a huge payer, that’s what’s driven by this genetic performance,” he says.

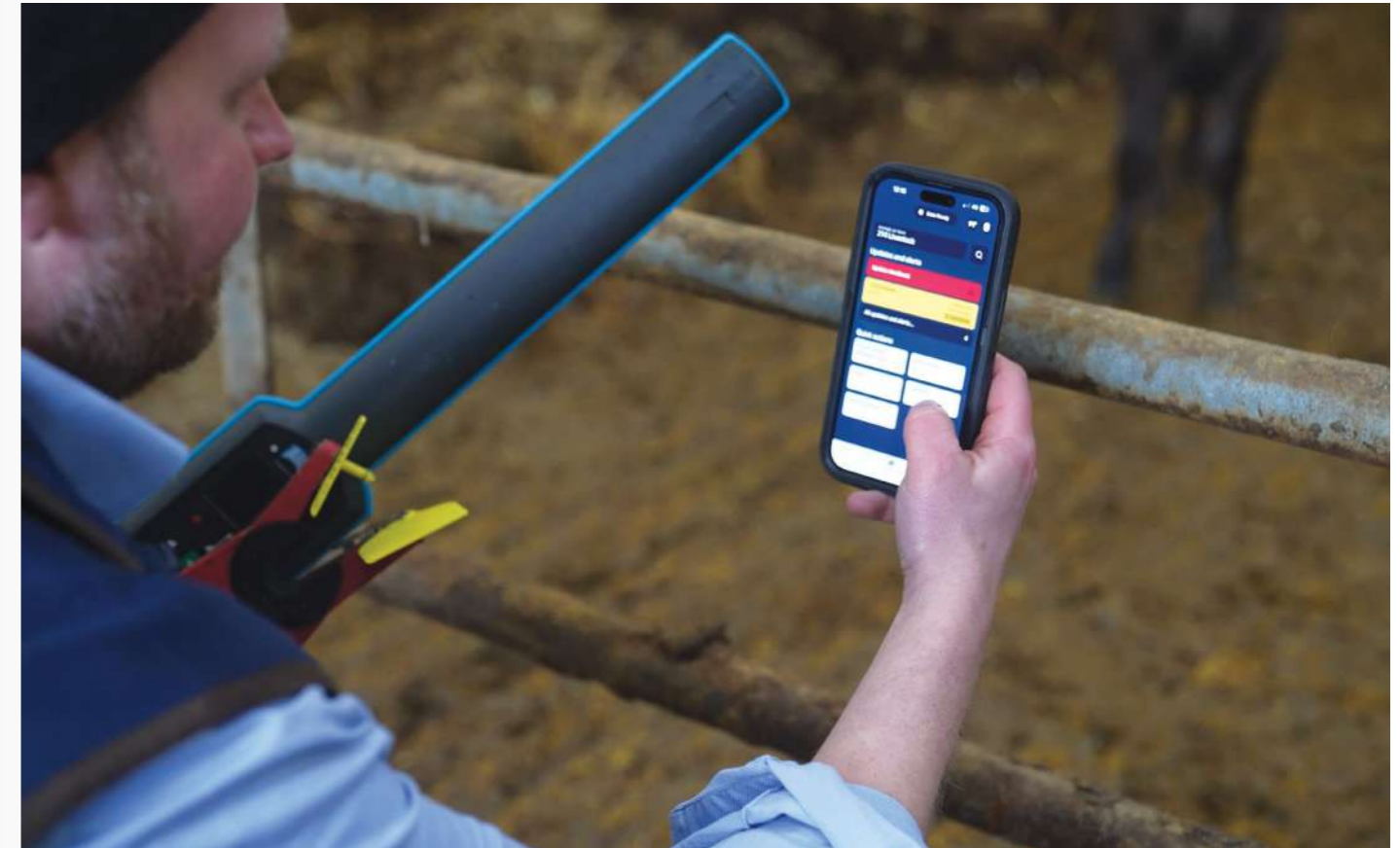
Research reveals quality advantage

Research overseas and in Australia has proved the quality of beef-on-dairy and straight dairy beef. **Dr Dale Woerner**, professor and Cargill endowed professor at **Texas Tech University**, has led the way in research looking at the meat quality of beef-on-dairy animals.

In a *2024 Beef-on-Dairy Industry Report* published by Purina Animal Nutrition, Dr Woerner said research conducted at Texas Tech University had found that beef-on-dairy products achieved the desired colour, mimicked conventional beef’s larger and rounder retail cuts, and had a longer retail shelf life than traditional dairy beef – resulting in less food waste and an opportunity for the products to coexist in the meat cooler.

“Our research shows that beef-from-dairy crossbreeds deliver a superior eating experience,” he said. “While Holsteins still top the charts for tenderness, beef-on-dairy animals excel in flavour, boasting a buttery profile thanks to their higher marbling.”

Dr Brad Johnson, Gordon W Davies Region’s chair of meat science and muscle biology at **Texas Tech University**, told the

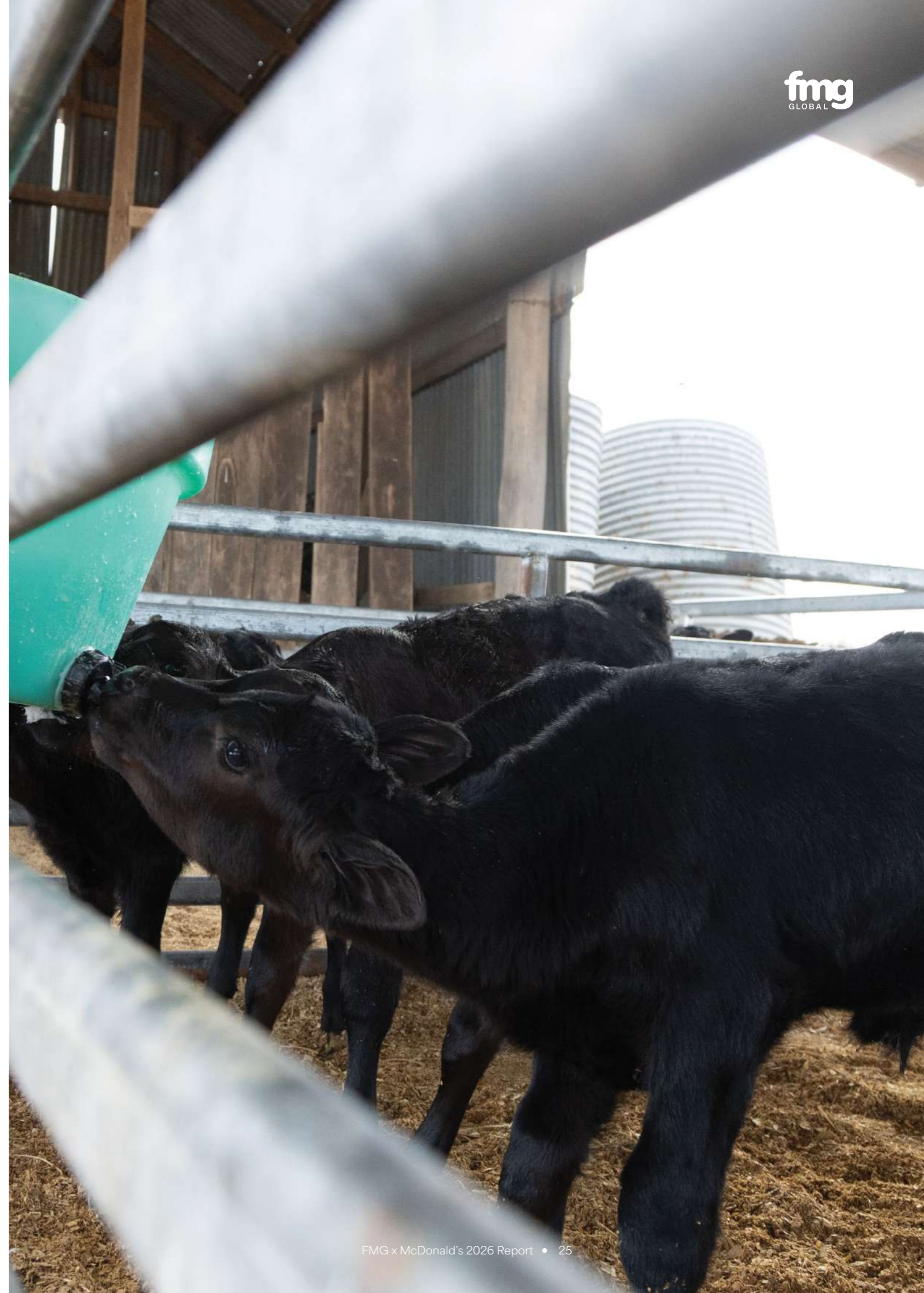


Top: Breedr’s unique cattle management app tracks every animal every step from conception to carcass. *Photo courtesy of Breedr.*
Bottom: Beef-on-Dairy Industry Report, Purina Animal Nutrition.

Real Science Exchange podcast series in March 2025 that the improved quality of beef-on-dairy animals came from a fundamental muscle fibre type. “It lends itself to really high-quality beef, both from a marbling standpoint, that’s the amount of intramuscular fat, but also from a tenderness and colour standpoint.”

Professor Jane Quinn, professor of veterinary physiology and animal science at **Charles Sturt University** in Wagga Wagga and director of the university’s Red Meat Innovation Centre, led a five-year research project looking at the potential for creating a viable dairy-beef supply chain for purebred dairy steers. The Centre co-ordinated the southern component of the consumer sensory trials, with more than 1,600 consumers tasting dairy-beef samples to give their opinion on its juiciness, tenderness, flavour and overall likeability.

Professor Quinn told an industry breakfast at 2025 International Dairy Week that the eating quality of dairy beef was magnificent, regardless of the finishing pathway for the animals. “Anyone who has grown up eating large amounts of dairy beef in other countries knows that often this is a really high-quality product. We saw that we got really good performance with the dairy-beef animals that we feed to our consumers. There was widespread acceptance of that product.”



Beef-on-dairy a verifiably low- emissions product

Why this is important:



Research conducted in Australia and New Zealand provides lifecycle assessment of beef-on-dairy supply chains



Points to potential big reductions in greenhouse gas emissions for beef sector



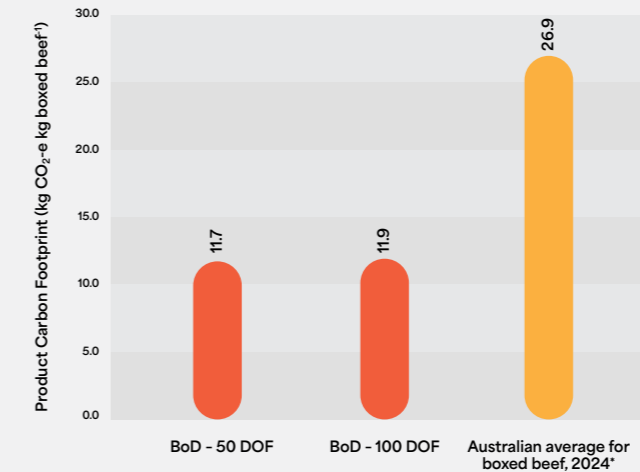
Offers a low-emissions product without the need for offsets



Delivers a marketing edge to retailers

Two new studies show beef produced through well-managed beef-on-dairy systems can deliver significantly lower emissions than conventional beef. For end users, such as meat retailers and foodservice operators, beef-on-dairy offers a way to meet sustainability expectations while maintaining consistent quality and supply.

Product lifecycle assessment results from beef-on-dairy pilot project



*Source: Sustainability Reporting Uplift Project Final Report, AMPC (2025)

Source: Integrity Ag

Greenhouse gas emission reductions

In official greenhouse gas (GHG) accounting and life cycle assessments (LCA), a calf born from a dairy cow has lower allocated emissions compared with a calf born from a beef cow. This is because in dairy production, the primary product is milk, and the calf is considered a co-product. Most of the emissions associated with maintaining the lactating cow are allocated to her milk production. In a beef system, all of the emissions are assigned to the beef product.

The latest research has revealed highly efficient beef-on-dairy systems deliver even greater emissions reductions.

Science-based, agri-environmental consultancy **Integrity Ag** undertook a lifecycle assessment for FMG Global on beef-on-dairy animals in a feeding trial as part of FMG Global's pilot project, comparing results with the conventional supply chain in Australia using information from the Australian Beef Sustainability Framework 2025 release. Integrity Ag managing director **Dr Steve Wiedemann** led the research.

The research revealed the **beef-on-dairy supply chain generated 57 per cent fewer emissions** per kilogram of boxed beef than the average beef produced in a conventional supply chain.

The beef-on-dairy boxed beef carbon footprint averaged 11.8 kilograms of carbon dioxide equivalent compared with the 26.9kg beef industry average. The reduction applied to all beef products, edible offal, pet food and tallow.

Research conducted in New Zealand by **AgResearch** for Fonterra and Alps2Ocean, released in November 2024, found a similar result. The lifecycle assessment analysis, led by senior scientist **Dr Andre Mazzetto**, showed reductions of up to 48 per cent in greenhouse gas emissions compared with the average for beef cattle.

Highly efficient systems with data critical

Both studies pointed to the need for efficient systems with data to produce the big reductions. “Emissions reductions can be achieved simply by integrating dairy-beef animals into the herd, but the scope of this reduction can be significantly increased with fast-finishing beef systems,” Dr Mazzetto says. “There would be few tools or management strategies available which can have such a significant climate impact.”

Integrity Ag says highly efficient growing/ backgrounding and grain finishing result in an animal with significant reductions in emissions, and that data collection across the supply chain is critical for analysis and auditability. Data needed from the dairy farm, backgrounding and finishing stages includes traceability on dairy performance, animal growth and time within the supply chain, as well as inputs relating to feed, energy and fertiliser. At the beef-processing stage, data is needed on facility energy usage, effluent management, kill sheets, mass flow data

showing breakdown of beef, hides, offal, petfood and value of beef as a percentage of total value.

What does this mean for the beef-processing sector?

Integrity Ag says with such significant reduction potential, introducing beef-on-dairy animals into a Science Based Targets initiative (SBTi) supply chain has real potential to deliver greenhouse gas abatement. “For example, introducing 5.5 per cent of beef-on-dairy beef into a conventional supply chain will deliver 3 per cent change across that entire beef supply chain,” it says.

Greater reductions are possible with use of feed supplements, which are particularly well-suited to the beef-on-dairy supply chain because the animals are frequently fed and monitored.

“This (beef-on-dairy) product has the best chance of being ‘net zero’ emissions with only small reliance on removals,” Integrity Ag says. “As the lowest emission beef on the market (without removals or offsets), it has a marketing edge. As a means to deliver scaled reduction for an SBTi program, it has serious potential.”

The NZ research identified the same potential. “Sourcing calves from the dairy industry presents an opportunity for the beef industry to significantly reduce its emissions, as well as providing an alternative use for calves from the dairy industry,” Dr Mazzetto says.

“This (beef-on-dairy) product has the best chance of being ‘net zero’ emissions with only small reliance on removals.”

Integrity Ag

The Supply Chain

The opportunity established in previous chapters is only realisable if the supply chain connecting dairy farms to processing facilities can be built on solid foundations. For Australian beef processors, beef-on-dairy offers an opportunity to secure a consistent supply of high-quality, sustainable product – while also playing a part in meeting changing consumer and market demands.

Sustainable supply gives processors the edge

Breeding ▶ Calf rearing ▶ Backgrounding ▶ Finishing ▶ Processing

Why this is important:



Beef-on-dairy offers a consistent supply of high-quality product



Rapid genetic development is driving a major increase in quality



Offers an opportunity to reduce carbon footprint



Collaborative supply chain key to unlocking potential

It does come with its challenges. The supply chain connections in Australia are not well established, meaning meat processor requirements are not always clear down the chain. Dairy farmers are not always conditioned to the fluctuating beef market prices, making it difficult to establish stable, long-term contracts. Pricing to ensure value is shared across the chain is also a challenge.



Damian Barsby, Harvest Road – Livestock General Manager

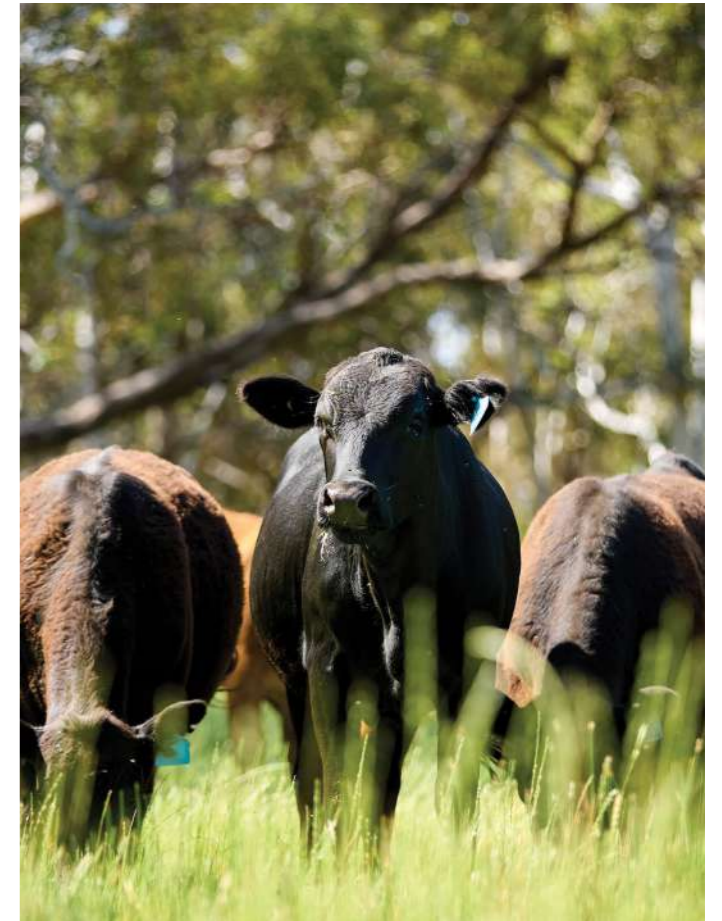


Photo courtesy of Harvest Road.

Opportunities for beef processors

Beef-on-dairy offers processors an assured, consistent supply that can help deal with beef supply volatility.

Damian Barsby, livestock general manager with Western Australian meat processor **Harvest Road**, sees potential for a beef-on-dairy program to offset traditional beef market supply shortages. “WA does run short of cattle at certain times because of the seasonal selling periods,” he says.

“With beef-on-dairy, we can potentially spread the joining times of dairy cows and aim for a more consistent supply all year round.”

Mr Ralph states that beef-on-dairy allows a beef processor to have part of their kill space covered. “But then on top of that, these cattle are actually really high-quality cattle and they will get better and better as the genetics improve and people become more skilled at working with beef and dairy,” he says.



Andrew Ralph and Dr Sarah Bolton inspecting Beef-on-Dairy P4 Pilot cattle.

“We are pairing a higher-growing, higher-yielding beef sire with a dam that marbles really well, so quality is almost always a huge advantage for these animals.”

Dr Sarah Bolton

The quality, particularly the high marbling ability of dairy breeds, means beef-on-dairy cuts can meet the specifications for premium overseas markets. Changes to the definition of Angus for certified Angus programs also offer the potential to open markets for Angus-Holstein cross animals.

Dr Bolton says the meat quality argument is clear. “Meat quality is certainly not the challenge when it comes to dairy breed animals. It’s growth

and performance, it’s carcass conformation and yield that is the real challenge. So when we use strategic cross-breeding to improve growth and performance throughout the animal’s life, improve carcass conformation and improve yield, we are then pairing a higher-growing, higher-yielding beef sire with a dam that marbles really well, so quality is almost always a huge advantage for these animals.”



Jessica Mitchell, Greenham – Livestock Supply Chain Manager

Jessica Mitchell, livestock supply chain manager at Tasmanian and Victorian-based meat processor **Greenham** and the key driver behind its beef-on-dairy initiative, says the relative size of the Australian beef and beef-on-dairy markets means beef-on-dairy will never be a huge part of the market.

“It’s only a small percentage of our overall slaughter. Unless you’re a small supply chain or one that regionally is well aligned, it’s probably not going

to make this enormous dent in your supply. It can offer some resilience, a bit of a baseline. But we get this beautiful added bonus of a lower carbon footprint to partner with it.”

Ms Mitchell says every beef-on-dairy animal they pull into their system has a 30–35 per cent lower carbon footprint. “So, if we made a third of our animals beef-on-dairy, which we could do in this region, we’re dropping our footprint by 10–12 per cent.”

Beef-on-dairy also offers the opportunity for beef processors to develop strong data-based traceability. **Laurence Williams**, director of the beef value chain for **Land O’Lakes** – a major American farmer-owned agricultural co-operative producing dairy products, animal feed and crop inputs – “We talk a lot about data,” he says. “How can we collect data on these cattle from birth all the way to harvest, capturing genetic information, what we’re feeding them, treatments, those sort of things. The consumer at some point is going to say, ‘how are you guys raising these calves?’. They might not be asking today, but we want to have that in our hip pocket.”

Mr Williams says dairy offers an advantage in this area because dairy farmers have well-established practices of data collection and artificial breeding.

“So, if we made a third of our animals beef-on-dairy, which we could do in this region, we’re dropping our footprint by 10–12 per cent.”

Jessica Mitchell, Greenham



Overcoming challenges

Developing collaborative supply chains is the key to unlocking Australia’s beef-on-dairy potential. Mr Ralph says the model to follow is clear. “We recognised early on, looking at the successful beef-on-dairy supply chains in North America, that they were the ones that were either vertically integrated or were highly collaborative. Everyone’s got to be working together. It’s a shift in mindset from a transactional-type relationship to more of a collaborative relationship.”

Mr Ralph is encouraging Australian beef processors to conduct small trials with a few pens of beef-on-dairy animals raised correctly to see how they perform. Many processors have had negative experiences with dairy beef in the past – inconsistent animals, poor yield, poor chain fit. “All those negative connotations come up when we talk to them,” he says. “What I say to the processors and the feedlotters is these are not the same animals that have historically been produced from the dairy industry. I believe you’re doing yourself a disservice by not at least exploring the opportunity.”

Setting up clear protocols for beef-on-dairy programs targeting certain markets can help overcome some of these issues. **Dairy Australia** in *CalfWays*, its 10-year strategy, identifies this as a key issue. Collaboration to develop and sustain robust market opportunities for calves is one of the objectives of the strategy. It identifies clear specifications and feedback being provided to producers as vital to enabling the breeding and rearing of animals that meet market requirements.

Ms Mitchell says Greenham used this approach when developing their successful grass-fed beef from dairy product. “We worked back and forth with a handful of dairies and wrote a dairy-beef program standard, which essentially mirrors our beef grass-fed standard. It has a whole bunch of additional management requirements pre-weaning to ensure that those animals can maintain the grass-fed, the antibiotic-free and the certified humane claims.”

The specifics of how to build the trust and pricing structures that underpin these relationships are explored in the Building Blocks section of this report.

Why this processor is embracing beef-on-dairy



Breeding ▶ Calf rearing ▶ Backgrounding ▶ Finishing ▶ **Processing**

Why this is important:



Processor looking for an assured supply



Wants to replace low-quality dairy steers with a higher-quality product



Aiming to provide certainty for dairy farmers

Western Australian beef processor Harvest Road is embracing beef-on-dairy to help bolster numbers for its Harvey Beef business. It sells branded retail products in the domestic market and exports to more than 30 countries. Beef-on-dairy is part of the company’s broader strategy to form collaborative supply chains in the WA market.



Harvest Road manufacturing plant. *Photo courtesy of Harvest Road.*

Damian Barsby is Harvest Road’s livestock general manager. “Outside of traditional supermarket brands, the southern WA market is made up of many different cattle classes in small numbers,” he says. “So we’re trying to develop strategies around feeder cattle supply for 100-day grainfed, and beef-on-dairy is one of the supply pieces of the pie.”

Harvest Road also sees a properly managed beef-on-dairy program as an opportunity to lift the quality of the product it has traditionally taken from the dairy industry. Each year, the company’s processing facility in the heart of WA’s dairy country at Harvey processes about 9,000

three-to-four-year-old dairy steers that dress 300–400 kilograms dead weight.

“Because of their size and age, the bulk of the product ends up in manufacturing beef, the same as cow,” Mr Barsby says. “They are very big cattle and can be at times inefficient to process.”

Harvest Road’s interest in the opportunity for beef-on-dairy was piqued at a conference in 2024. This led to talks with genetics company Semex about sourcing steers from dairy farms that had been using improved beef genetics. These were put through the company’s feedlot at Koojan Downs for their 100-day grain-fed product range as part of an initial trial.

“I think there is an appetite from dairy farmers. We’re trying to move them away from selling us a traditional dairy steer to a beef-on-dairy steer that we can utilise as a commercially higher value animal.”

Damian Barsby, Harvest Road

The trial beef was a high-quality product with nearly a three marble score average. “They have shown from the initial trial that feeding performance and eating quality are on par with traditional beef breeds,” Mr Barsby says. Because of this, the cattle will fit into Harvest Road’s existing 100-day grainfed programs.

Harvest Road is in the early stages of developing its beef-on-dairy program working with Semex’s national sales manager Vaughn Johnston. The company ran a field day last year, inviting dairy farmers to be part of the program.

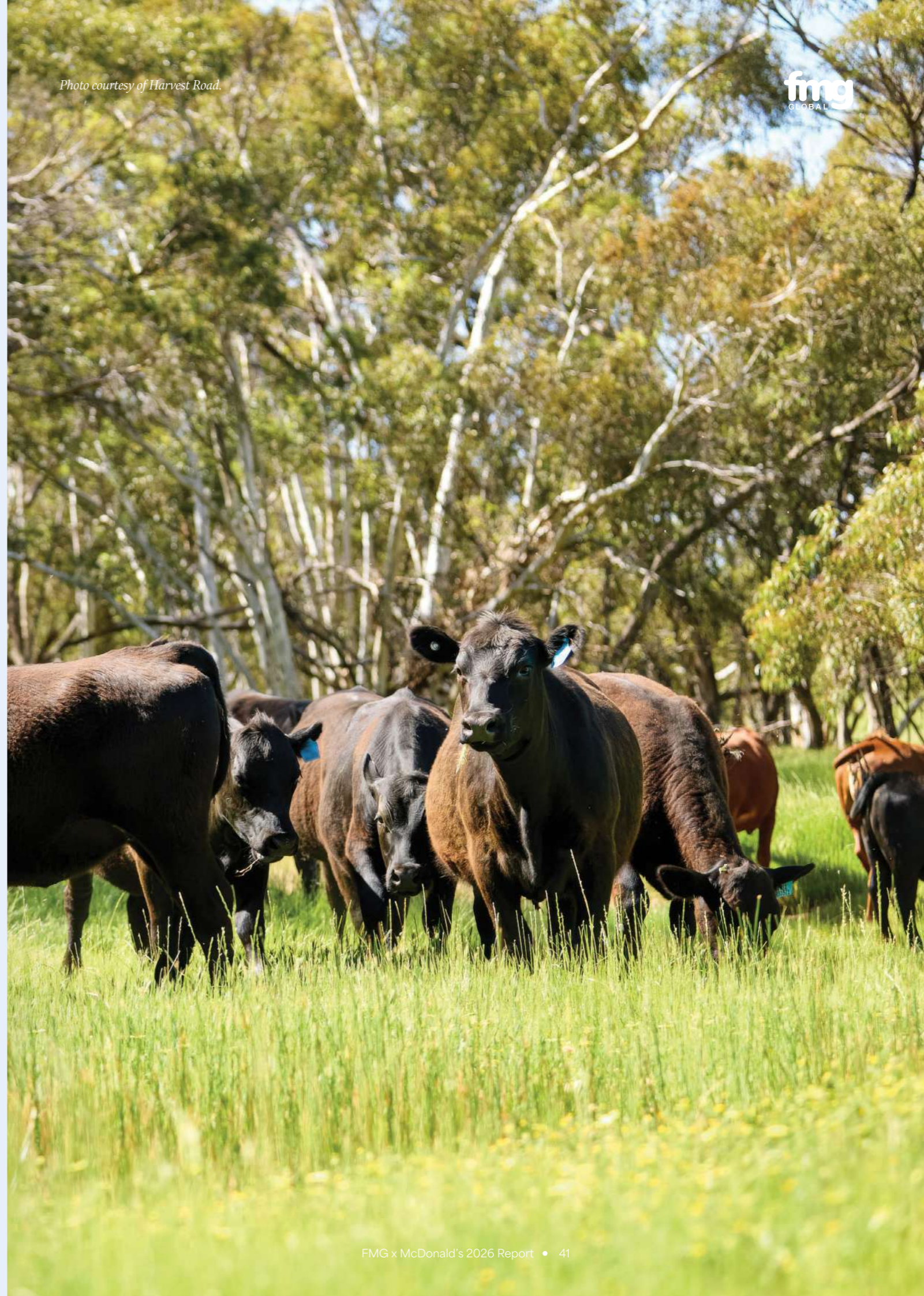
“I think there is an appetite from dairy farmers,” Mr Barsby says. “We’re trying to move them

away from selling us a traditional dairy steer to a beef-on-dairy steer that we can utilise as a commercially higher value animal. If we get those animals out younger and into the supply chain, we can potentially utilise more country around WA for backgrounding young cattle instead of seeing them exit the WA supply chain. That’s our incentive.”

The new program would offer some consistency to dairy farmers. “Farmers love consistency. They know their production systems and what they can achieve to the day when they sell, that allows us plenty of time to program these cattle into our system.”

Photo courtesy of Harvest Road.

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Beef-on-dairy helps build a UK giant



Breeding ▶ Calf rearing ▶ Backgrounding ▶ Finishing ▶ Processing

Why this is important:



Fully integrated beef-on-dairy supply chain



Control across the chain key to success



Calf-rearing brought in-house to guarantee quality



Predictable turn-off allows consistent volume through slaughterhouses

The experience of building supply chains from scratch is not unique to Australia. The Buitelaar Group has leveraged beef-on-dairy animals to build the United Kingdom’s largest integrated beef supply chain, harnessing their inherent advantages to create a high-quality, consistent product backed by predictable volumes and pricing. The lessons from that journey are directly relevant to the Australian industry.



Buitelaar Group CEO Adam Buitelaar in his herd of English Longhorn cattle. The Buitelaar Group has taken ownership of calf-rearing in its beef-on-dairy operation as it sees it as such a critical supply-chain function. *Photo courtesy of Buitelaar Group.*

Adam Buitelaar is CEO of the group, which processes about 100,000 beef-on-dairy animals a year, 52,000 of which it fully owns.

In 2004, he started the journey to transform his family’s five-generation company from being an export business, procuring calves in Ireland and the UK for veal production in the Netherlands and beef production in Spain, to feeding animals and setting up its own supply chain. Last year, the combined livestock division turned over slightly more than £200 million.

Mr Buitelaar says the journey from feeding their first 30 calves to buying 1,000 calves a week today was a steep learning curve. “We fell in every hole you can imagine over that time,” he says.

The key to its success is a laser focus on every part of the supply chain, backed by research at its own development farm, to produce a consistent product at the right quantities at the right time for its customers. And it’s a product his major retailer customers are keen to get their hands on.

“We work with several retailers, and companies like McDonald’s, and give them a resilient supply chain with predictable volumes, tailored to the time of year,” Mr Buitelaar says. “Because we control the system, we can give customers the numbers they need, when they need them – and deliver, consistently. It’s no good having the best steak in the world if you only get it once. What matters to us is delivering a really good steak, consistently –

“It’s no good having the best steak in the world if you only get it once. What matters to us is delivering a really good steak, consistently – so the customer knows exactly what they’re getting every time.”

Adam Buitelaar, Buitelaar Group

so the customer knows exactly what they’re getting every time.”

He says the quality of beef-dairy cross animals varies less than that of beef animals, which can come from multiple breeds and different crosses, anything from Wagyu to Charolais-cross to heritage breeds. “With the dairy-beef, you start from a much more consistent genetic base. You’ve got a black-and-white dairy cow with more predictable traits, which is artificially inseminated with proven beef genetics, specifically chosen for feed conversion and eating quality. We process our cattle at 19 to 21 months of age on a consistent diet – which results in a consistent product.”

The Buitelaar supply chain

Buitelaar buys dairy calves from about 270 dairy farms, either for a weekly spot price or through a contract with a price forecast. Contracted calves must meet stringent rules, including minimum weight and quality grades. All calves are weighed and tested on arrival at one of four collection centres. The tests include a nose-prick test to assess immunoglobulin levels to determine if the calves have received an adequate amount of colostrum – a test Buitelaar helped develop at its research development farm. Dairy farmers receive bonuses for higher-quality calves.

Buitelaar Group beef-on-dairy calves in the company’s purpose-built facility.
Photo courtesy of Buitelaar Group.





Top: The Buitelaar Group has its own development farm – Long Lane – where it undertakes research. Bottom: Buitelaar’s rearing systems are built around standardised health, welfare and nutrition protocols, supported by an ongoing commitment to innovation and continuous improvement for optimal calf performance. *Photos courtesy of Buitelaar Group.*

Calves are then reared from two weeks to 12 weeks in one of Buitelaar’s 12 specialist calf-rearing units. “We’ve seen a big difference since we brought the animals in-house; it’s really about getting the maximum amount of fine-tuning of the animal,” Mr Buitelaar says. “Because when you’ve got a Ferrari, it doesn’t mean you can drive 200 miles an hour. You need to be able to understand and handle that machine you’ve got.”

In the calf-rearing unit, calves are fed high-quality milk replacer developed by Buitelaar based on research at its development farm – 25kg of powder across 35 days – before being transitioned onto a corn-based ration. Calves are then assigned to partner farms where they are reared on a per kilogram of weight gain contract. All farms are supported by Buitelaar’s tech team. “Actually, it’s mostly ladies in vans,” Mr Buitelaar says. “We have seven people who go around farms doing welfare checks, health checks, and, as well as advising farmers on nutrition, they’re flagging any issues that we might have.”

The control through the system allows Buitelaar to manage when animals are turned off for processing. “We have a big degree of predictability in our system because we’ve put a lot of animals through it,” Mr Buitelaar says. “We understand our farmers, we understand the feed, we understand the genetics of the animals, and we also understand that you can have health issues or different things that were identified early by the tech team, so we know that the batch of calves is going to be delayed.” A final check is conducted by a field agent to ensure the animals are ready for processing.

At the slaughterhouse, animals are batch selected and processed to suit different markets. “We can do breed-specific days,” he says.

“It could depend on what type of farm they’ve come off: an intensive farm, so it’s grain-fed, or an extensive or regenerative farm. We have different meat brands for those animals.”

Buitelaar supplies major retailers and sells its own brands. Its award-winning beef products are renowned for their consistency and superior eating qualities.

Lessons for Australia

Mr Buitelaar says the key to successfully developing beef-on-dairy supply chains in Australia is to be fully committed. “Prepare for it, build for it, commit to it. You can’t be half in and half out.”

Then it is about getting the calf rearing right, the genetics right and the feed right. “To be totally honest with you, there’s not a lot more to get right. It’s not that complicated.”

He says beef processors need to look beyond their own markets to understand the success of beef-on-dairy systems. “If you’re unsure about the opportunity, get on a plane. Go and see the businesses that are doing it well – I think you’d be surprised by what’s possible. It’s an exciting space with significant untapped potential.”

Australian beef processor concerns about the quality of beef-on-dairy don’t stack up, he says. “We have dairy-cross animals which will stand nose to nose with well-bred traditional beef animals. The difference is we’re working with a much more consistent genetic base. I’m certainly not saying traditional beef cattle don’t have a strong and important place in the market – they absolutely do. But I am saying there’s a significant opportunity with dairy-beef that shouldn’t be overlooked. To ignore it would be a mistake.”

Unlocking the feedlot potential

Breeding ▶ Calf rearing ▶ Backgrounding ▶ **Finishing** ▶ Processing

Why this is important:



Feedlots are a key link in the beef-on-dairy supply chain



Consistency and uniformity are essential for efficient feeding, carcass outcomes and market confidence



Well-designed beef-on-dairy programs can deliver additional assured supply and potential emissions benefits

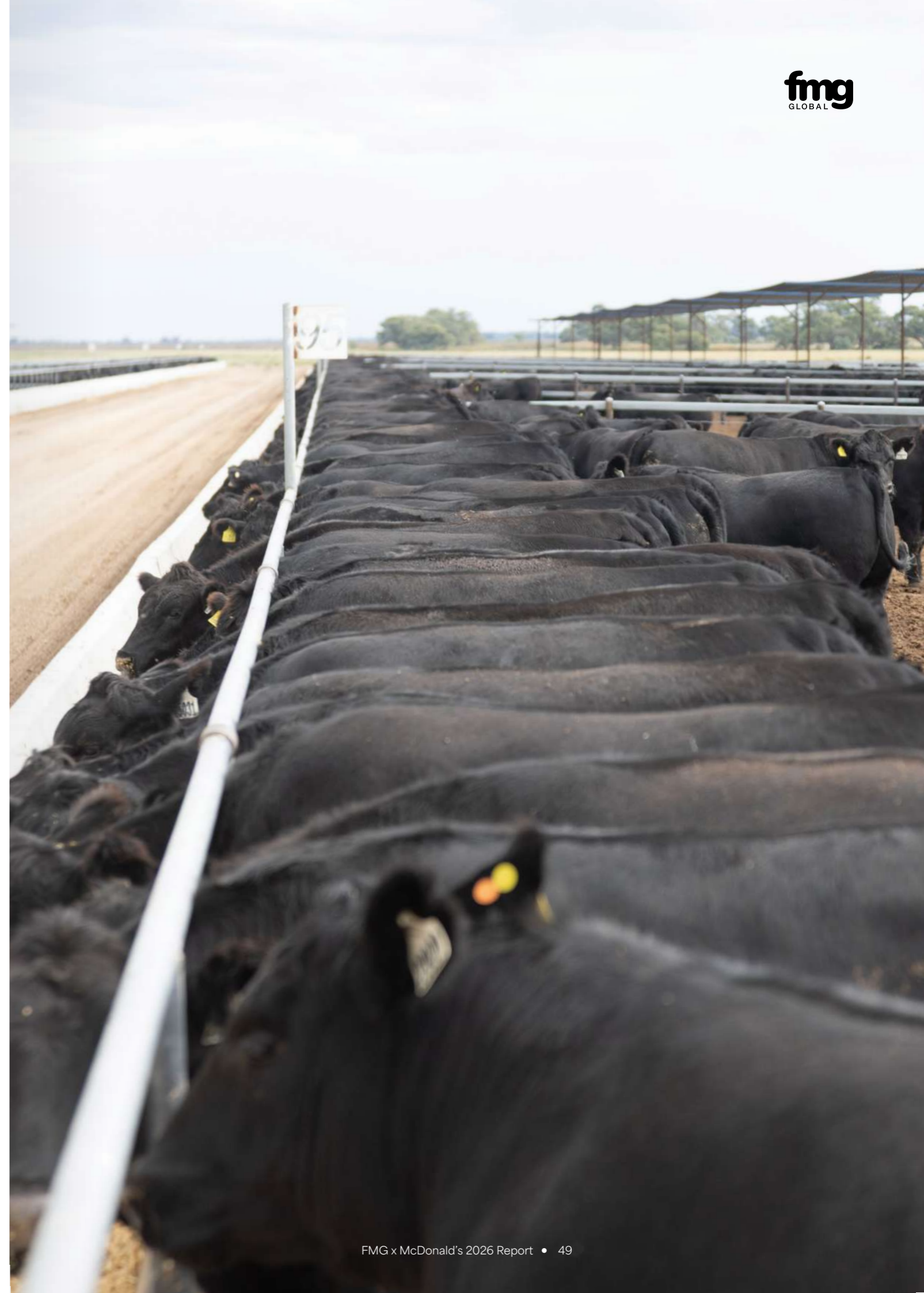


Robust transparent supply-chain relationships critical to unlocking potential

High-quality genetics are central to making beef-on-dairy work in feedlots. When animals are bred and raised through well-designed beef-on-dairy programs, they can perform on par with, and in some cases outperform, traditional beef cattle on grain. For Australian feedlots, this presents an assured additional source of supply.

Beef-on-dairy also offers the potential for feedlots to reduce their greenhouse gas emissions per kilogram of beef produced – a structural advantage explained in detail in the emissions article in the previous chapter.

The challenge here is to create robust, transparent supply-chain relationships that deliver the right cattle at the right weight at the right time, supported by pricing structures that fairly share risk and reward to all participants.





James Maclean, Allied Beef – Founder and Managing Director

Uniform quality key for feedlots

Allied Beef, established in 2007, is a large specialist beef cattle business operating across key cattle regions of eastern Australia, from northern Queensland to Victoria. The company runs two feedlots and a marketing and agency business, giving it excellent end-to-end knowledge of breeder, stocker and feeder markets. **James Maclean** is the founder and managing director.

He says Allied Beef has been interested in the dairy industry as a non-traditional source of cattle suited for intensive feeding since 2020. It has sourced animals from Victoria from a specialised calf rearer and directly from dairy farmers at about

140 kilograms, then backgrounded them on grass on its properties in northern NSW to about 300kg before finishing them in its feedlots.

Initially, variability in the animals was a major challenge. “Initially, most beef-on-dairy were being produced from low-quality Angus bulls. We were taking steers as well as heifers, in most cases. And, as they were being aggregated from a number of different breeders, there was a lot of variation in the performance of the cattle.” That variability continued from the background phase into the grow-out phase and the feedlots. “You had some high-capacity cattle that would continue to grow at similar growth rates to beef cattle,” he says. “However, you’d also have a lower-performing animal.” When these cattle were turned off to go to a customer, there was a large variation in carcass size, and combined with the flatter dairy muscle, this translated to variation in cut size. This created some short-term negatives, despite the meat quality often being higher.

Mr Maclean says the development of high-quality beef-on-dairy genetics has changed that. The more proactive dairy farmers now understand that the genetic makeup of the calf is critical to them developing long-term supply relationships with companies such as Allied Beef.

“That is the really exciting part,” he says. “My view is that beef-on-dairy potentially has the ability to outperform beef on beef because you can generate a terminal type program because you don’t worry about the female component.”

The beef-on-dairy animals are also quieter in the feedlot. “They’re quite domesticated cattle, and they’re certainly a lot more inquisitive,” Mr Maclean says. The reduced stress potentially improves meat quality. The fineness of the

“That is the really exciting part. My view is that beef-on-dairy potentially has the ability to outperform beef on beef because you can generate a terminal type program because you don’t worry about the female component.”

James Maclean, Allied Beef

beef-on-dairy, due to the weaker muscle from the dairy side, also produces a more tender cut.

The improved genetics has prompted Allied Beef to trial a different feeding regime with the beef-on-dairy animals because they believe they have increased capacity compared with conventional beef animals.

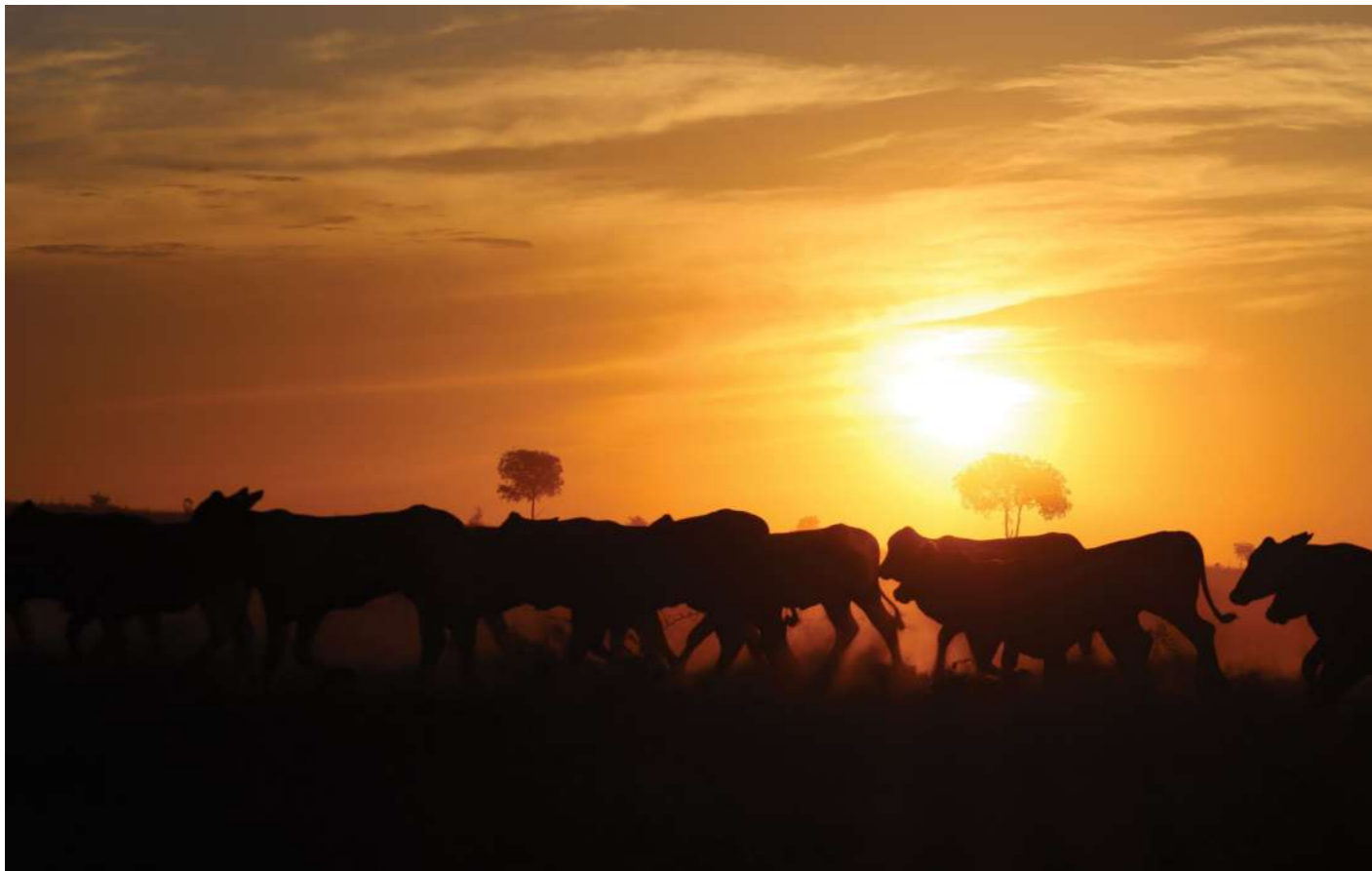
Sustainability bonus

Beef-on-dairy is also appealing to feedlots because of its reduced carbon footprint. “There’s certainly a natural advantage of attributing fewer emissions from the female against the calf. I think that’s huge,” Mr Maclean says.

The improved beef-on-dairy genetics and the more controlled pathway for these animals, which should mean they are fed well their whole life, will also potentially offer environmental and emissions-reduction benefits. It should mean these animals can be processed by the time they are 400 days old, which is quicker than many traditional beef cattle.

Beef-on-dairy offers an alternative production model that reduces emissions, rather than the option of buying offsets to produce low or zero-emission beef.

Beef-on-dairy also allows the dairy industry, including dairy processors, to address the



Photos courtesy of Allied Beef.

surplus calf issues. This aligns with their corporate environmental, social and governance (ESG) goals, Mr Maclean says.

Robust, transparent supply-chain relationships

With beef-on-dairy an immature market in Australia, the challenge is creating supply-chain relationships that deliver the right product and fair pricing structures. Mr Maclean points out that the beef market operates with much shorter timeframes that don't allow prices to be set when dairy farmers are making decisions about calves.

"Most of our product ends up getting priced pretty well within two to three months of when we supply to our customer," he says. "And export markets are maybe three-to-five months as a rule."

Long-term contracts fail if the market changes. "Someone ends up walking because they go so far out of whack with the money," he says. "It's not the intention of anyone to not be there when a market moves, but it's a global market that fluctuates."

Potential solutions are pricing mechanisms, such as a price index, cost-plus pricing or price swaps. "I think it's very important going forward that there'll be more structured supply relationships," he says. "The price gets worked out by a mechanism, and then you work out the delivery times and things through a relationship."

Mr Maclean says he thinks there will be three different approaches taken. Larger, corporate dairy farms with 2000 or more cows will broaden their business plans to develop a grow-out phase for their beef-on-dairy animals. Farms down to 300 cows will either seize the opportunity to rear their animals to about 240kg or will sell their calves to specialised rearers.

He also expects to see more structured supply relationships. This will likely involve protocols and quality-assurance programs, which help guarantee the quality of animals delivered to feedlots. "I think this is very important going forward for companies like us," Mr Maclean says.

All parts of the chain will need to commit to holding onto animals through to the desired weights. Mr Maclean says dairy farmers who commit to growing out animals can't suddenly try to offload them early if circumstances change on farm, as feedlots are not in position to quickly take on additional animals. "Processors and lotfeeders are quite structured businesses," he says. "They don't have spare pens for a large group of cattle just to turn up randomly because it's got dry in the Riverina."

Exploiting the grassfed premium

Breeding ▶ Calf rearing ▶ **Backgrounding** ▶ **Finishing** ▶ **Processing**

Why this is important:



Grassfed beef premium niche market



Tasmanian beef on dairy pilot program successful



Expansion into Victorian dairy regions



Animals offer significant carbon footprint advantage

Tasmanian and Victorian beef processor Greenham Australia has successfully developed a beef-on-dairy supply chain to bolster supply for its premium grassfed beef market – demonstrating that the opportunity is not limited to grainfed or commodity pathways.

The processor launched a pilot program with Tasmanian dairy businesses in 2021 and has since expanded the program to its Victorian plants at Tongala and Moe. The pilot program proved beef-on-dairy animals could achieve liveweight gains and eating quality equivalent to their beef counterparts raised under the same conditions.

The supply chain provides a viable alternative pathway for surplus dairy calves. For grass finishers and backgrounders, it provides a new source of dairy-origin calves eligible for Greenham’s premium grassfed beef program.



Jessica Mitchell, Greenham – Livestock Supply Chain Manager

Premium grassfed markets

Ms Mitchell is the key driver behind Greenham’s push into beef-on-dairy.

Greenham established its Never Ever Beef Program in 2012 in response to growing market demand for premium grassfed beef produced naturally. It supplies various markets, primarily in the United States, including food service businesses, retailers such as ‘natural’ supermarkets and companies producing foods such as sausages and bone broths.

“They’re expecting that the products on the shelf are aligned with their values,” Ms Mitchell says.

“That they’re clean, green products, that the animals had a good life, that they’re good for their health.”

The US is such a huge market that even a niche such as grassfed beef can be significant. “It’s definitely one we’ve seen grow from strength to strength in the US over the past decade,” Ms Mitchell says. Greenham has tripled production of premium grassfed beef since it launched. “As we’ve seen continued growth, we’ve redeveloped our Tongala plant with a large percentage of that doing premium grassfed beef.”

Pilot beef-on-dairy program

Greenham launched its Dairy Beef Program for several reasons. The business was originally built on processing cull cows, many of which came from the dairy industry, giving the company

“They’re expecting that the products on the shelf are aligned with their values. That they’re clean, green products, that the animals had a good life, that they’re good for their health.”

Jessica Mitchell, Greenham

established close relationships with dairy farmers. Greenham saw male calves from dairy operations as an underutilised resource – something that had been ignored by both industries. “It’s simply our responsibility to make the most out of the resources that we’re using,” Ms Mitchell says.

The location of its plants in the heart of key dairy regions also meant it encountered dairy-cross animals that were not eligible for its existing premium programs or were sold at a significant discount, despite having good eating quality.

Greenham implemented a program to capture high-value grassfed beef from these dairy suppliers and create a pathway for these animals to access higher-value markets.

The pilot program established a dairy-beef program standard that mirrored Greenham’s Never Ever Beef Program standard, but included additional pre-weaning management requirements. This ensured the animals could meet claims such as grassfed, antibiotic-free and certified humane.

To encourage adoption, Greenham published price grids for beef-on-dairy animals at various stages. Price premiums were offered for the use of approved genetics that enhanced growth and yield, while retaining eating quality, as well as traits traditionally sought by dairy farmers, including calving ease and short gestation length.

“This created a conversation that helped producers understand Greenham’s specific requirements for

Beef-on-dairy animals from the Greenham grassfed program.
Photo courtesy of Greenham

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profitable beef animals and prioritise those traits in their bull selection,” Ms Mitchell said. “Genetics companies also began proactively marketing their bulls as meeting Greenham’s standards.”

Greenham also ran a trial, finishing beef-on-dairy animals at its Tasmanian property, Westmore. The cattle achieved liveweight gains and eating quality equivalent to their beef counterparts.

Program expansion

After the success in Tasmania, the program was expanded to the Moe and Tongala plants. As it matured, Greenham focused on promoting beef-on-dairy as a source for their beef producers who background and finish animals. The genetics selection component remained, with producers viewing it as a requirement for program participation.

In Tasmania, the program has been particularly successful, with more than 100 dairies and rearers participating, and calves predominantly feeding into other accredited grassfed producers in Greenham’s system.

On the mainland, growth has been slower. Ms Mitchell says the mainland offers advantages for the expansion of the beef-on-dairy market more broadly in the long term. These include year-round calving, shedded dairy farm systems and more pure Holstein herds.

The new AUS-MEAT framework to allow for export animals with an Angus claim with 50 per cent Angus will also open opportunities.

Sustainability advantage

Another driver for the uptake of beef-on-dairy is the significant carbon footprint advantage these animals offer, Ms Mitchell says. A calf born to a dairy cow is assigned only 12 per cent of the mother’s annual emissions at birth, whereas a beef calf is assigned 100 per cent. So even if beef-on-dairy animals make up only a small portion of a processor’s or finisher’s production, it can have a significant impact on their carbon footprint.

“I think that’s a very real benefit that gets people interested,” Ms Mitchell says. “It starts the conversation and incentivises people to give it a go.” It helps demonstrate outcomes for mandatory climate reporting requirements and sustainability goals.

However, this sustainability advantage relies on the animals performing well in terms of growth and yield. If they take significantly longer to finish, the carbon advantage can be lost – making quality genetics that ensure equivalent growth crucial.

To be eligible for financial premiums when supplying Greenham, cattle consigned under the GDBP must be:


Raising claim	Key Requirement
100% grassfed	Not fed grain or grain by-products. Grain-free starter rations are commercially available today.
Lifetime traceable	Cattle must be individually traceable for their whole lives. Traceability can be recorded using NLIS tags and further strengthened by farm management tags and on-farm record keeping.
Lifetime antibiotic-free	Eligible cattle must not be treated with antibiotics or ionophores (e.g., Rumensin), including in milk replacer, lick blocks or feed. Antibiotic-free milk replacers are commercially available at feed stores today.
No added hormones	Cattle must be HGP-free and not fed finishing diets that contain steroids.
GMO-free	Supplementary feed cannot contain genetically modified ingredients.
Free range	Cattle must never be confined for intensive feeding. Once weaned, calves should have continuous access to pasture.
Certified Humane®	High welfare outcomes are important to Greenham, our customers, and our loyal cattle suppliers. Request a copy of the Greenham Dairy Beef Program for more information.
Beef x dairy genetics	Cattle must be at least 50% beef genetics.
Meat Standards Australia (MSA) eligible	Cattle must come from an MSA-registered property and meet the minimum requirements for MSA grading.


Source: www.greenham.com.au/our-dairy-beef-program/


Calf rearers a key link in the chain


Breeding ▶ Calf rearing ▶ Backgrounding ▶ Finishing ▶ Processing

Why this is important:

- 

Calf rearing critical part of supply chain
- 

Close attention to detail vital for success
- 

Focus on nutrition to ensure development for muscularity and marbling
- 

Challenge to ensure adequate returns for most costly phase of rearing

The supply chain articles so far have focused largely on processors and feedlots. But there is a critical link that sits upstream of both – one that is unique to beef-on-dairy systems and arguably the hardest to get right. Calf rearers are a key link in beef-on-dairy supply chains. They raise calves from a young age (up to two weeks) through to weaning at about 10-12 weeks. Their role is unique to beef-on-dairy systems, as in traditional beef supply chains, calves remain with their mothers until weaning.





This early stage is one of the most critical. Feeding these young calves well and minimising health issues is essential for their subsequent growth and the quality of beef produced. It is also one of the most challenging – success depends on close attention to detail and managing the stresses of transporting young animals and, at times, blending groups of calves from different farms. And it is the most costly phase, but the furthest from the final market. A key challenge for beef-on-dairy supply chains is to ensure the value at the end of the chain flows back to the rearers.

Specialist calf rearers

A 2023 study by **RM Consulting Group for Dairy Australia** assessed the economic impact of raising surplus dairy calves for the beef market. It found that for dairy farmers to take on rearing calves, significant investment in calf-rearing facilities may be required, but achieving consistently attractive returns could be difficult without more stable beef prices. The study identified the active involvement of specialised calf rearers as having the potential to bridge the gap between dairy farmers and feedlot operators/meat processors and to help manage economic risks. However, there are few specialised calf rearers in Australia.

In contrast, the United States has a large number of specialised calf ranches. Ian Wheal, founder and CEO of agritech company Breedr says about 50 per cent of calves are raised in large systemised calf ranches holding from 10,000 to 100,000 head. The other half are raised in smaller operations run by Amish and Mennonite families, typically managing about 200 head in a barn, with a high reliance on family labour.

Specialised calf rearers also operate in the United Kingdom, where land-use regulations have made it possible for young people to buy a small plot to raise calves, establish themselves as farmers and later apply to build a house on the land, increasing its value, he says.

Mr Wheal sees the development of the calf-rearing segment as the most critical for the Australian industry. It is vital that calf rearers – whether dairy farmers rearing their own calves or specialised operators – raise the beef-on-dairy animals with the same care and standards as they would a heifer destined to join the dairy herd.

The challenge lies in the cost versus the return. The Dairy Australia study identified that the cost per kilogram of weight gain is significantly higher in the pre-weaning phase than in later growth stages, due to the high cost of milk per kilogram. Calf rearing was the only stage where the cost per kilogram of gain exceeded the mean beef price per kilogram.

Mr Wheal says rearers can make money if they hold onto a calf for longer. “The only way you can make money is not in the most expensive period of a calf, which is from birth to 200 kilograms,” he says. “The only way to make your money back is during your cheapest gain, from 200 to 300 or 400 kilograms.” The key is to have the ground or the facilities to keep calves through to 400 kilograms.

Australian calf rearer: Circular Head Farms



Circular Head Farms is a Tasmanian dairy farm investment group that, since its launch in 2014, has grown into a network of 12 dairies on more than 5,500 hectares of farmland, milking 9,500 cows. Seven of those farms are run by 50/50 share farmers who make their own decisions about calves. A contract rearer rears the surplus calves from the other five farms.



Circular Head Farms contract calf rearers Aiden and Sarah Coombe with beef-on-dairy calves on feeders on farm in Tasmania. Photo courtesy of Circular Head Farms.

Rowan Popowski, the group's operations manager, says Circular Head Farms started raising beef-on-dairy calves five years ago, primarily to help manage surplus calf issues and to value-add to their operation. They initially reared between 1,000 and 1,200 calves each year and have now ramped up to 1,400.

Aiden and Sarah Coombe are the contract rearers, paid per head weaned. Mr Coombe says attention to detail is the key. "For a large-scale operation,

if you're going to do it, you've got to do it well, because things can turn a corner really quickly if you don't." The Coombes are also beef farmers, and Mr Coombe worked for processor Greenham in their grass-finishing operation.

Calves are transported to the calf-rearing facility at up to seven days of age from farms less than an hour away, in a purpose-designed trailer that can pick up from two different farms at once. They are initially quarantined in a fully enclosed rearing shed or in shed paddocks, with the

"For a large-scale operation, if you're going to do it, you've got to do it well, because things can turn a corner really quickly if you don't."

Aiden Coombe, Circular Head Farms

induction process including pain relief for transport and a mineral supplement.

Their feeding regimen includes five litres of whole milk for the first 30 days and access to grain-free pellets. Kelp/seaweed is incorporated into the milk for micronutrients and biochar in the pellets to act as a toxic binder. Monitoring for disease is critical, with the Coombes focusing on visual assessment, particularly early on. Sick calves are generally retained with their group, and they provide electrolyte feeds for hydration. They find this approach more successful unless extra care is needed.

They keep records of mortality rates and antibiotic treatments. Mr Popowski says while their mortality rates have significantly reduced in the five years due to improved rearing practices, bringing young calves from various farms into one area at 5-7 days of age carries risks.

Both point to the support of Greenham throughout the journey, providing forward pricing support early on, as crucial to the viability of the solution. But both warn that the highly cyclical nature of the beef industry doesn't necessarily suit dairy operations. "Dairy producers really want that consistency," Mr Coombe says. "And that doesn't generally mean a higher price. It just means a price that they know they're going to get. I think the aggressiveness of the beef cycle needs to be taken into full consideration with the dairy-beef job. It's probably a unique job. I think we need to take those big curves out of the beef cycle and just have a smoother line of pricing and even forward casting."

Mr Popowski says beef-on-dairy calves are expensive to rear, so if there isn't a margin longer term, is it sustainable? "I still see that probably being one of the

biggest risks going forward. As soon as there's a downturn in the beef price, there are no forward contracts available in dairy beef. All of a sudden, there's potential flooding in the market, and there'll be a significant price crash, and then people won't invest in doing them again.

"Dairy beef is a growing industry, and potentially it's got a lot of opportunity, but it is still only a very, very, small portion of our business with dairy farmers."

UK fully integrated model: **Buitelaar**



The Buitelaar Group, whose supply chain model is described in detail in the preceding case study, regards calf-rearing as such a critical function that it manages it through its own in-house units.



Buitelaar High Health Units are a flexible, high-performance calf housing system developed on their rearing farms. *Photo courtesy of Buitelaar Group.*

Previously they had 38 contract rearers and dealt with 19 different vets. “There were too many varying opinions, leading to inconsistent calf quality,” Mr Buitelaar says. “We’ve spent a massive amount on calf rearing. The first 10 weeks are the most important time of life: to try to do that cheaply is the biggest mistake you can make.”

Centralising the rearing process enabled Buitelaar to introduce standardised protocols and health assessments, ensuring a high-quality animal at weaning,

with mortality and morbidity rates improving significantly.

Mr Buitelaar has data to show that adequate colostrum is tied to lifetime growth and lifetime antibiotic use. The company also lung-scans calves to identify those that may have been compromised even without obvious signs, as these animals show dramatically reduced growth throughout their lives. Farms that consistently fail to provide calves meeting the requirements do not have contracts renewed.

US calf-rearing nutrition program: **Land O’Lakes**



Laurence Williams is director of the beef value chain for Land O’Lakes, a major American farmer-owned agricultural co-operative producing dairy products, animal feed and crop inputs. He helped to drive the development of a beef-on-dairy calf-rearing protocol called **Prime Start**.



Land O’Lakes has developed a beef-on-dairy calf-rearing protocol called Prime Start. *Photo courtesy of Land O’Lakes.*

“These animals are different genetically, so we needed to create a nutrition program that’s specific to them. We knew that they wouldn’t do as well being raised in a typical dairy system.”

The 12-week program includes a milk replacer for the first eight weeks of life and a special blended dry feed containing protein, amino acids and proprietary additives to positively influence the microbiome of the calves. “We’ve done 18 trials in the last few years to really hone in on what that animal needs,” he says.

Feeding newborn calves the correct amount of quality colostrum is also a key part of the program. “But colostrum is just job one,” he says. “What happens to that calf on day two, three, four and 100? They say that marbling is a lifetime event. These cattle can’t have a bad day.”

The Dairy Farm

Every element of the supply chain described in the preceding section ultimately depends on what happens at its origin. The success of any beef-on-dairy program starts on the dairy farm. Dairy farmer breeding decisions, calf-rearing practices and understanding of the beef market lay the foundations for success.

It all starts on the dairy farm

Breeding ▶ Calf rearing ▶ Backgrounding ▶ Finishing ▶ Processing

Why this is important:



Dairy farm decisions and practices set up success for rest of the chain



Beef-on-dairy a solution to the dairy industry surplus calves issue



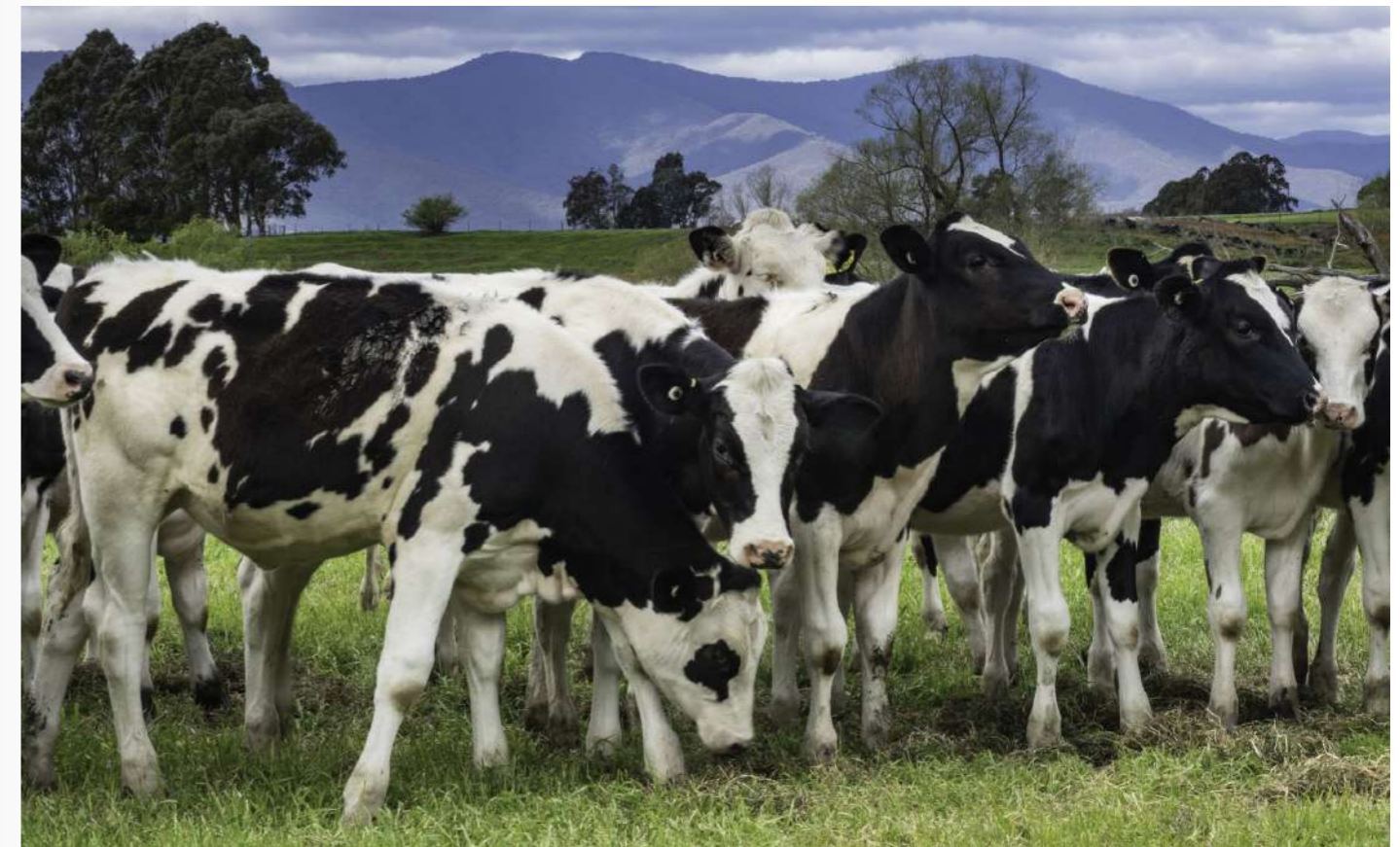
Pricing and supply chain connections are challenges

Beef-on-dairy offers a solution to one of the dairy industry’s most vexed issues – managing surplus calves and, in particular, reducing on-farm euthanasia of newborn calves. It also offers a potential source of additional farm income unrelated to the dairy industry, helping farms manage volatility.

But the lack of strong connections between the dairy farm and the beef supply chain is hampering market development. Dairy farmers are increasingly incorporating the use of beef semen in their breeding programs, but are not always rearing those calves because they lack a clear view of the end market.

Sustainable solution to a vexed issue

Dairy Australia has a 10-year strategy, Calfways, to transform the management of dairy calves in Australia by 2035. The Calfways roadmap aims to enable industry collaboration to ensure a viable option for every calf. The roadmap clearly lays out the reasons for this.



“Social licence has become an important consideration for the dairy industry as farmers are beginning to face security issues regarding the treatment of bobby calves as part of the dairying process,” it says. “This problem has led to a growing demand for alternative calf pathways where farmers can diversify their income streams while adhering to societal expectations. One such opportunity is raising dairy calves for the beef market.”

Dr Bolton says social licence preservation is clearly a significant driver for dairy farms to become involved. “I think when we’re looking at that, it’s important to consider public trust in our industry, of course. But equally, I think an increasing part of the conversation is the role that social acceptability has to play in terms of social

acceptance for those working in the industry. We know that the sustainability of agricultural careers is impacted by workers’ mental health on farm and job satisfaction. When we have people working on farms that feel good about what they do, it’s easier to employ people and it’s easier to retain people.”

Mr Popowski says the surplus calf issue was a direct driver for **Circular Head Farms**. “Essentially, it was born from the need to come up with different ways to manage the bobby calf issue on farm. And we really felt that at some stage down the track, there is going to be push back from the consumer around that social licence. And we felt that there was at the same time an opportunity to probably better value-add with that.”

“Dairy farmers need to know what their customers need, whether they are selling to a rearer, growing out to 150-200 kilograms for backgrounders or growing to feedlot entry weights.”

Andrew Ralph, FMG Global

Circular Head is an investment fund, with investors mostly from the local community. “So people understand the processes that we follow in dairy farming, but it’s essential to make sure that those investors are comfortable with what we’re doing on farm,” Mr Popowski says.

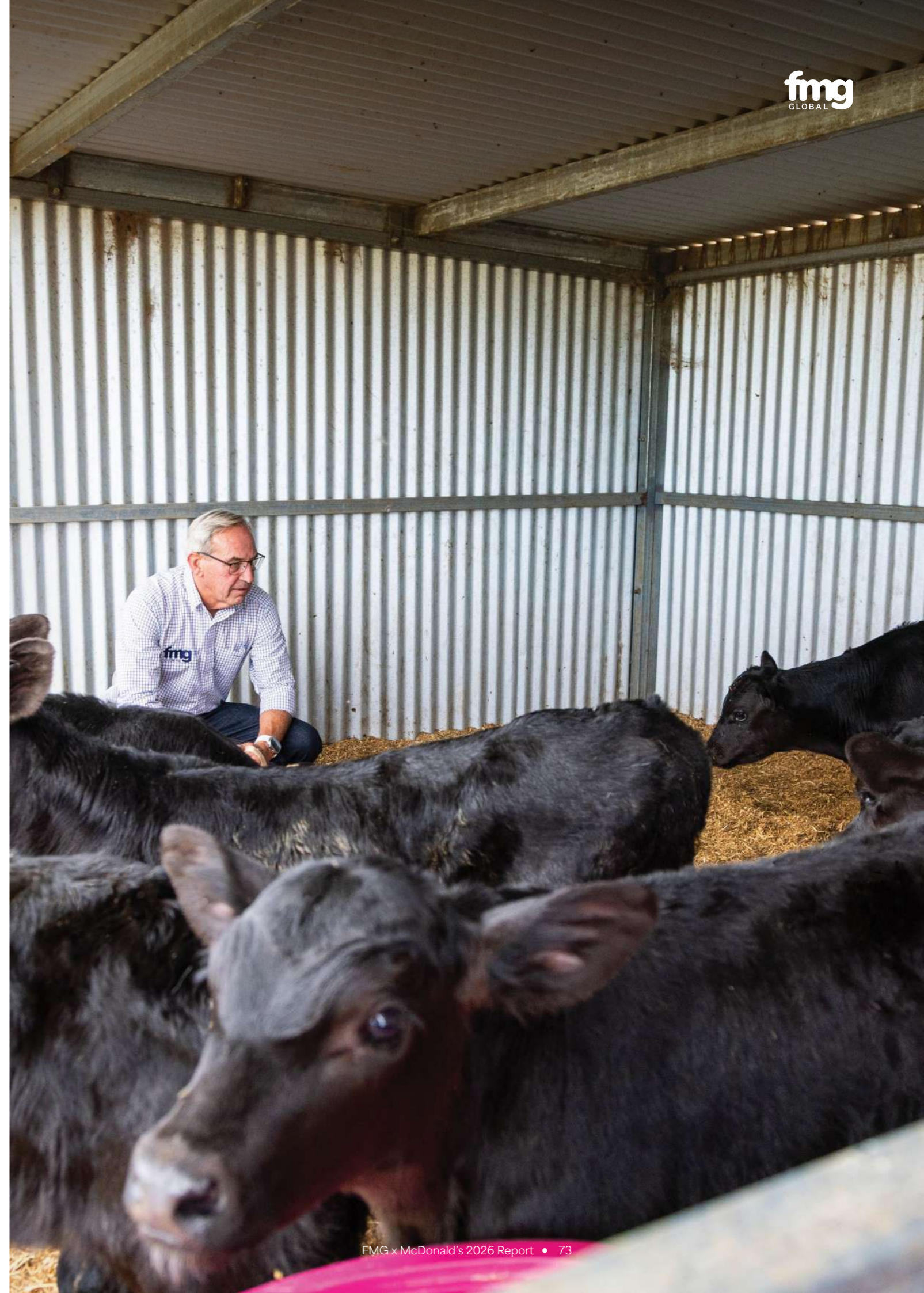
How dairy farms can create success

Mr Ralph says the keys for success for dairy farmers include: knowing the market they are targeting; using the right genetics; ensuring proper colostrum management; implementing and following appropriate health protocols; providing adequate nutrition; documenting and collecting

relevant data; aiming for the lowest cost of production; and adhering to standard operating procedures.

If farmers can tick all these boxes, they can create a low-risk calf that will be highly appealing to beef processors. “For beef processors, if you can’t tick any box, it’s a high-risk calf, and they don’t want to touch it,” he says.

For dairy farmers, it starts with understanding the beef market. “Know what your target market wants. The premium export markets want marbled beef – Japan, China, Korea, the Middle East. The domestic retailers focus less on marbling. Dairy farmers need to know what their customers need,





whether they are selling to a rearer, growing out to 150-200 kilograms for backgrounders or growing to feedlot entry weights.”

Mr Popowski says their relationship with Greenham was critical in providing a clear end market. “Greenham has been very good to us through the journey. They’ve given us a secure market, which has been very important.” Greenham also provides clear guidelines for them to meet the requirements of its Dairy Beef Program.

Mr Ralph says dairy farmers need to work with their genetic providers to ensure that the traits they are selecting will produce the type of animal the beef supply chain needs. **Jo Holloway** of **Semex** says the right beef-on-dairy genetics can deliver benefits for both dairy and beef production. From a dairy perspective, farmers prioritise calving ease and high fertility so cows remain pregnant and productive – traits that beef genetics used in dairy herds have traditionally provided. In the past five years, genetics companies have also developed beef genetics that address some of the limitations of pure Holsteins for beef production, particularly in growth rates and carcass conformation.

Semex, like other genetics companies, offers several options. One is a single-bull straw, while the other two are multi-bull straws containing semen from three bulls. The high-fertility mix includes bulls with different sperm capacitation rates, meaning the sperm remains viable for longer in the cow. The other mix is more supply-chain focused, containing bulls with similar high-quality genetic merit suited to grassfed or grainfed beef production systems.

Mr Holloway says Semex research has shown that beef semen generally delivers better conception rates – 5-8 per cent higher – over sexed and conventional dairy semen, reducing the average

number of days open for the herd and meaning more milk in the vat. “We’ve had some farmers say that these beef calves have about a \$400 credit on their head at birth because of the improved conception rate and short gestation,” he says.

Mr Popowski says Circular Head uses sexed semen across selected cows and beef semen across the rest. “Sexed semen has come a long way in the last 10 years but particularly in the last five years,” he says. “It’s negligible the difference between sexed and conventional.” The beef semen is selected from Semex in line with the Greenham criteria, also with a focus on calving ease.

Mr Ralph says once the calf is on the ground, standard operating procedures play a key role, including proper colostrum management with testing for passive transfer of immunoglobulins, adequate nutrition and health management.

Sharing the value

Pricing and supply chain connections remain challenges for dairy farmers. Mr Popowski says the price point is important, as is having a home for the cattle. “We just know that as soon as there’s a downturn in the beef job, the first one to get discounted is the calf. It’s up to the full supply chain to ensure a sustainable pricing model that provides consistency and transparency, as it is in all stakeholders’ best interests to see the beef-on-dairy industry grow sustainably.”

But he acknowledges it works both ways – dairy farmers shouldn’t abandon contracts just because the beef price is high. Both sides need to be as open and transparent as possible. The specific pricing mechanisms being explored to address this challenge, and the broader principles for building collaborative supply chains, are addressed in the Building Blocks section of this report.

Why this farmer is embracing beef-on-dairy

Breeding ▶ Calf rearing ▶ Backgrounding ▶ Finishing ▶ Processing

Why this is important:



Dairy farmer uses sexed semen over top portion of herd and high-quality beef-on-dairy genetics on remainder



Delivered benefits to dairy operation in reduced semen costs and fewer days open for cows



Treats young beef-on-dairy calves the same as straight dairy calves



Lack of a consistent, well-established market has been a challenge

The challenges and opportunities facing dairy farmers are perhaps best illustrated through the experience of a farmer who has navigated them first-hand. Monique and Mark Bryant are dairy farmers near Kaarimba in northern Victoria. They milk 750-800 cows across two platforms on about 800 hectares.

Monique Bryant says they became involved in beef-on-dairy about five years ago, after installing activity collars on their cows. Improved heat detection allowed them to use sexed semen on

their top cows to produce replacement heifers, and the decision to use beef semen over conventional dairy semen for the remainder of the herd was straightforwardly economic.



Victorian dairy farmer Monique Bryant became involved in beef-on-dairy about five years ago. *Photo courtesy of Gardiner Foundation*

“Even if you just sell that beef calf versus a Holstein bull calf at seven days old, you’re nearly going to get three or four times as much money for them,” she says.

Initially, they used a beef-on-dairy product containing three different sires in a single straw, but have since moved to single-sire straws from one or two beef bulls across the remainder of the herd. “My observation was that there was too much variation in the calves coming into the shed. Their bodyweights were sometimes 15 kilograms apart, and if you’re trying to build a group to sell, buyers are looking for uniformity.”

Using highly fertile beef semen delivered another bonus. “Normally, the cows getting the Angus are either carryover cows or older cows, both of which are traditionally harder to get in calf. Now more of those cows are

pregnant to first service. I have noticed that we’re using less semen than previously.”

This is delivering more milk in the vat. “We need the pregnancy to generate a new lactation, and that’s really the valuable bit. So, if you can get most of your herd back in calf by 120 days in milk, you’ll be making a lot more money compared to those farms that push out to 150-160 days.”

Mrs Bryant treats the young beef-on-dairy calves the same as her straight dairy calves. All pregnant cows are vaccinated with Scourshield about four weeks out from calving to lift the quality of the colostrum, and as soon as the calves come into the shed they are tube-fed with five litres of colostrum. “This protocol is set for all calves, including the beef-on-dairy calves, to avoid confusion for the staff.”

Dairy farmer challenges

Deciding when to sell their beef-on-dairy calves has been a challenge for the Bryants, particularly as their dairy business has expanded. “A couple of years ago, we had surplus feed and weren’t as busy, so we held on to them, found a market and that was working,” Mrs Bryant says. But in the past year, with the dairy expansion—including planning for two new barns –and a drier season, they decided to sell the calves at two weeks of age to a specialised rearer.

“Come autumn, I think I’m going to do that again,” she says. “Just because I don’t quite have the capacity at the minute to be focusing on doing a really good job on them.”

The Bryants’ attention to detail with young calves has paid off. One buyer recently sourced calves from the Bryants as well as from another dairy farmer at \$10-\$20 less per head.

“A couple of years ago, we had surplus feed and weren’t as busy, so we held on to them, found a market and that was working.”

Monique Bryant

The other calves became sick, and veterinary tests revealed they had not received colostrum. The buyer later told Mrs Bryant he understood why she said her calves were worth more.

Another rearer is keen to buy weaned calves from the Bryants because he knows they have sound, good-sized cows and are using quality beef-on-dairy semen. “He thinks for him as a rearer, if I can get them to 120 kilograms, he can take them the rest of the way.”

The big on-farm challenge is having the right infrastructure. Mrs Bryant says to do a “really good job” of rearing beef-on-dairy calves, a separate facility with dedicated pens and a different feed ration is required. She is

less concerned about additional labour but acknowledges it could be an issue for farms running lean.

A lack of a consistent, well-established market has also influenced the Bryants’ decision-making. The highly cyclical beef market makes it difficult to commit to rearing calves for longer. A consistent price – for example, the Eastern Young Cattle Indicator price plus 10 or 20 cents a kilogram, or a cost-plus price – would help keep her interested.

Contractual reliability has also been an issue. They have experienced problems where buyers either didn’t pick up calves as agreed or other suppliers on a load pulled out when prices increased, making transport difficult.



Mrs Bryant says she wants to build a two-way relationship with buyers. “I don’t want the lows, but the other guy probably doesn’t want to have to pay the highs, so there probably just needs to be a bit of a middle road.”

Clear protocols from beef processors and data feedback would also be useful. Feedback on how animals perform at kill would help identify areas for improvement, particularly around the genetics used.

“There is a risk for the whole supply chain if dairy farmers supply an average or below-average product to the market.”

A man with grey hair and glasses, wearing a light blue and white checkered shirt and dark blue jeans, is crouching on a dirt field. He is looking towards a large group of black cows standing in a line. Many of the cows have blue ear tags. The background consists of a line of green trees under a clear sky.

Building Blocks

The supply chain articles in the preceding section illustrate what is possible when beef-on-dairy is done well. But possibility is not the same as practice. Across the interviews and case studies gathered for this report, five themes emerged consistently as the foundations on which successful beef-on-dairy systems are built. They are not independent – they reinforce each other at every stage of the chain. Together, they represent the operational blueprint for scaling beef-on-dairy in Australia.



Robust Relationships

Why this is important

- Collaborative supply chain crucial to success
- Offers assured supply for beef processors
- Gives dairy farmers assured pathway for surplus calves
- Need to build trust and understanding
- Pricing mechanism needs to be developed

Of all the building blocks, this one is perhaps the most fundamental – and the most difficult to establish. The articles throughout this report have returned repeatedly to the theme of collaboration: the need to shift from transactional to partnership-based thinking across the entire supply chain. This section draws those threads together.

Mr Ralph, who is leading McDonald's first Australian Beef-on-Dairy Pilot Program to increase annual processing of beef-on-dairy cattle in Australia to 100,000 head by 2030, says the lesson from successful supply chains elsewhere is consistent. "They were the ones that were either vertically integrated or were

highly collaborative. Everyone's got to be working together. It's a shift in mindset from a transactional-type relationship to more of a collaborative relationship. It's a bit of a mind shift for everybody along the supply chain. But it's critical to long-term success."

"Everyone's got to be working together. It's a shift in mindset from a transactional-type relationship to more of a collaborative relationship. So, it's a bit of a mind shift for everybody along the supply chain. But it's critical to long-term success."

Andrew Ralph, FMG Global

Advantages offered

Collaborative supply chains offer advantages for all participants. For processors and end customers like McDonald's, it's about risk minimisation – potentially having two years of calves contracted through the supply chain. "They know that they've got a certain amount of their kill space covered, and we know that we've got X number of metric tonnes of trim already covered for the McDonald's system," Mr Ralph says.

For dairy farmers, collaborative supply chains help build resilience by offering

an assured pathway for their surplus calves and another known source of income. Mr Popowski says Circular Head's motivation was partly commercial and partly about addressing the social licence concerns around bobby calves – and the relationship with Greenham has been central to making it work.

Mr Williams says the value of beef-on-dairy calves in the US has made the relationship between dairy farmers and the beef supply chain increasingly mutually beneficial, with day-old calves now fetching more than US\$1,500 a head.



Robust Relationships

“They can see the opportunity that these calves are of such value, and there’s also a sustainability story,” he says.

Collaborative supply chains also offer the opportunity to collect data for verifiable sustainability or low-emissions claims. As detailed in the emissions article, the data requirements span the full chain – from the dairy farm to the processing facility. “You need all the data from the farm itself to the meat in the box, and then you give that data to the auditor ... and they’ll tell you what your reductions were and how much you can claim,” Mr Ralph says. “And everybody in each node of the supply chain, as long as they’re doing something different, can make that same claim.”

In strong collaborative supply chains, data can also be used to provide feedback to participants. Ian Wheal’s Breedr platform – which tracks every animal from conception to carcass – enables those using it to optimise genetics, health and performance. Dr Bolton says there are clear advantages in traceability, welfare and trust for processors who establish closer relationships with the beginning of the value chain and everyone in between.

How to build trust

Building trust and understanding is vital to establishing collaborative supply chains. Participants on both sides have been burned in the past by people failing to meet contractual obligations,

including parties walking away from deals and dairy farmers providing inconsistent quality. Building trust requires showing through action that commitments will be honoured, even when market conditions fluctuate.

Mr Ralph says he is having fairly open and frank discussions with all participants in the supply chain. “I think this builds trust and understanding from both sides. Beef processors need to be convinced of the value of beef-on-dairy animals. This can be achieved through small trials that demonstrate the performance, yield and quality grading of these cattle.”

“We are pioneering this thing pretty much. Where we’re seeing success is where we get both sides together. They understand their various challenges, what their needs and wants are and what it’s going to take to be successful.”

Dr Bolton says the dairy industry must produce the right kind of animal for the beef sector. “That starts with understanding what the beef industry wants and being able to present a product or an animal that is viable in some way. Then, when you have interest from the beef industry, you can start to build closer connections.”

One of the big challenges that threads through the experiences of the dairy farmers and feedlotter in this report is finding a pricing mechanism that works for everyone. Mrs Bryant articulates the dairy farmer’s perspective clearly:



Beef-on-dairy cattle arriving at feedlot.

“Dairy farmers know in July what their income is going to look like for the next 12 months. We’re not conditioned to beef market variability. And on the flip side, maybe the beef processors or the feedlotter don’t understand the questions we’re asking because they don’t know what it’s like to have a set price for 12 months moving forward.”

Mr Ralph acknowledges the challenge. “I don’t know where we’re going to land on it, to be honest. But we want to give the dairy farmer a fair price year in, year out.” Options being explored include a cost-plus model,

a negotiated price based on current market conditions, a price index or price swaps. What is clear is that the approach needs to be collaborative rather than imposed. “Both sides need to be as open and transparent as possible,” as Mr Popowski puts it. “Obviously, there’s no point in paying too much for the calves if there’s no money at the end of the day for the processor. But if there’s not a margin longer term, is it sustainable?”

Nailing Nutrition

Why this is important

- Nutrition at every stage of life key to quality product
- Starts with feeding sufficient quantity of high-quality colostrum
- Ensure adequate milk feeding in first eight weeks

Nailing nutrition at every stage of a beef-on-dairy animal's life is the key to producing a quality product. It starts with ensuring calves are fed sufficient quantities of high-quality colostrum within 12 hours of birth and continues through pre-weaning, backgrounding and finishing.

Mr Williams is emphatic on this point. "Colostrum is just job one. What happens to that calf on day two, three, four and 100? They say that marbling is a lifetime event. These cattle can't have a bad day."

"Colostrum is just job one. What happens to that calf on day two, three, four and 100? They say that marbling is a lifetime event. These cattle can't have a bad day."

Laurence Williams, Land O'Lakes

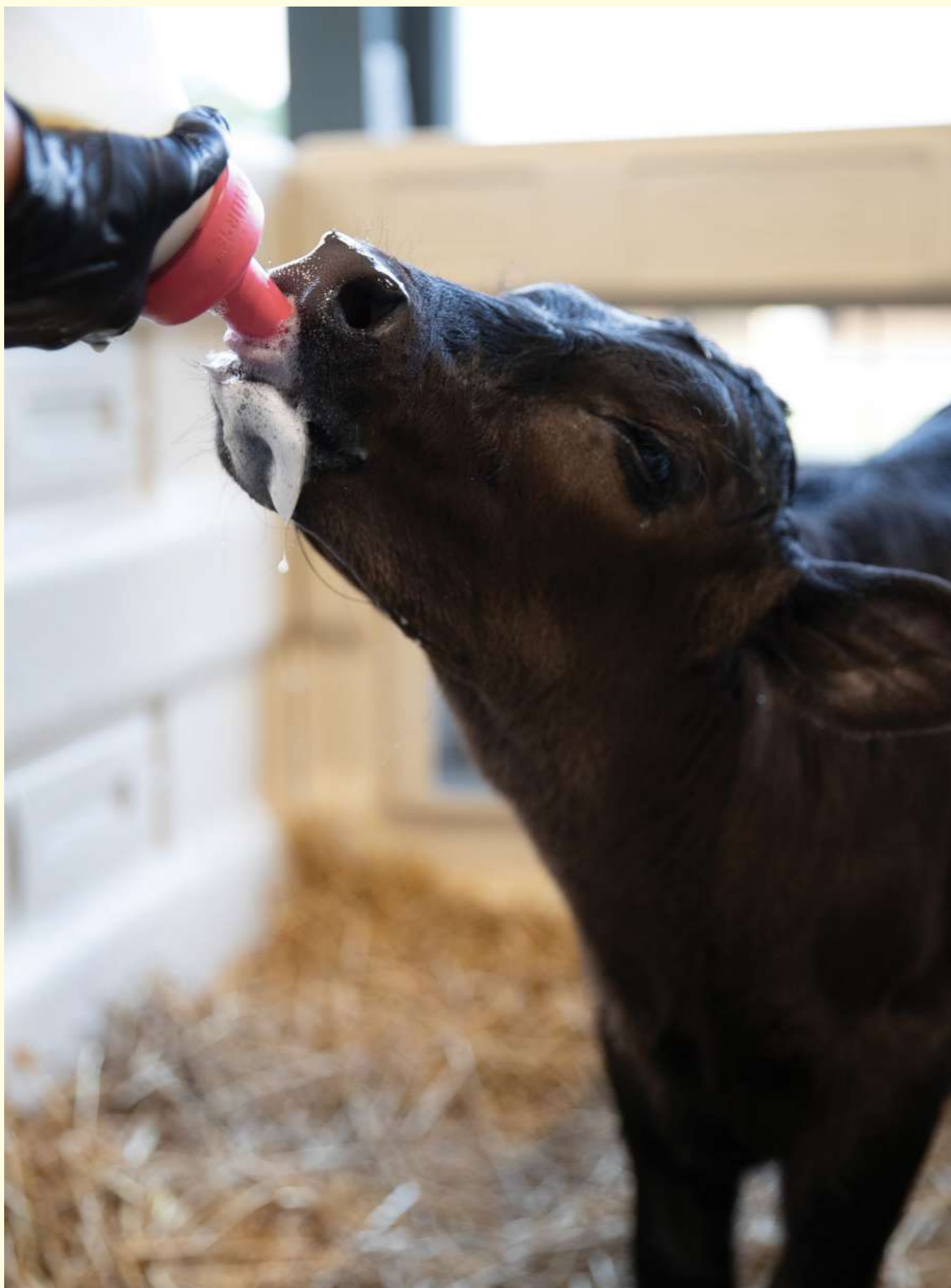
Early life nutrition

Mr Wheal says there needs to be more focus on the first two weeks of these calves' lives to ensure a high-quality product at the end of the chain. Ensuring calves receive a sufficient amount of high-quality colostrum in the first 24 hours is the starting point – calves that receive proper colostrum are more resilient and better equipped to manage stress.

Mr Wheal says testing for this by measuring for passive transfer through blood tests is being incorporated into

calf-rearing supply chains in the US and Europe. "You can see if the dairies are giving them the right amount of colostrum to build enough immunity in the first 48 hours. They will pull blood on calves and pay accordingly if they're not doing it."

The next step is to ensure calves receive sufficient milk, particularly in the first four weeks of life. Dr Bolton says calves receiving 15-20 per cent of their body weight in milk in that critical period may lay down more meat-producing tissue.



Ensuring calves receive adequate amounts of colostrum and milk is critical. *Photo courtesy of Land O'Lakes*

Mr Wheal says calves fed insufficient milk simply do not grow. “What I’ve seen here in the US is that some calf rearers semi-starve them to save on milk. And then they wonder why they don’t grow in the first three weeks. I say, ‘well, I can tell you why – you’re underfeeding them.’”

Mr Williams says beef-on-dairy calves are different genetically from their straight dairy counterparts. “Because of the added muscle, you have to feed them differently.” Purina Animal Nutrition has developed a specific calf-milk replacer, recommended to be fed for a minimum of eight weeks, and a starter ration for beef-on-dairy animals. This gives calves adequate time to transition from a milk-based diet to solid feed, encourages feed intake, supports rumen development, minimises stress and ensures a smooth adjustment to the post-weaning phase.

Purina Animal Nutrition’s research has revealed that early-life nutrition influences muscle and fat development – shaping the number of fat cells that drive marbling, and how muscle cells grow. Calves experiencing stress or other feeding setbacks have an increased risk of liver abscesses when they move onto high-concentrate diets.

Later life nutrition

Dan Dorn, business development and sales support with US-based genetics company **ABS** for its ABS Beef InFocus program, says that so long as they are fed well up to weaning, beef-on-dairy cattle bred from the newer tailored genetics perform the same as straight beef cattle in backgrounding operations and in feedlots. “They respond – so that’s the key. When they then go on to starch and roughage diets, they actually take off.”

Mr Dorn says with the right feeding program, the beef-on-dairy genetics are ticking the box for feed conversion efficiency – the number one profit driver – and carcass traits such as marbling and muscling. Finishing rations typically consist of 80 per cent starch and 10–20 per cent roughage.



Great Genetics

Why this is important

- Great genetics drive profitability across the entire supply chain
- The right genetics deliver better growth, efficiency, and value
- Data-driven genetics unlock stronger, more consistent performance
- Poor genetics limit performance and reduce profit potential

High-quality beef genetics are critical to successfully building beef-on-dairy supply chains in Australia. These genetics drive profitability along the supply chain. The industry here is well-positioned to capitalise on North America’s rapid development and identification of beef genetics best suited for use over Holsteins – and to learn from the mistakes made there a decade ago.

Identifying the best beef genetics for dairy farmers

North American genetics companies have moved quickly to meet the burgeoning demand for beef-on-dairy, using genomic information and data to identify the best beef genetics for dairy farmers.

Dennis Serhienko, a beef sire analyst with Canadian-based genetics company

Semex, says the key was to identify beef genetics that overcame some of the shortcomings of pure Holsteins. The first challenge was that the rib-eye of Holsteins was narrower than that of beef breeds, creating a stigma in food service markets. “What we found was using really high rib-eye size genetics changed those beef-on-dairy cross cattle ... so it looked exactly like the beef rib-eye,” he says.

“I strongly believe, based on the data that we’re seeing, if we’re able to select the right genetics to feed in a feedlot and get really outstanding results, we can do the same thing on a grassfed system as well.”

Brad Gilchrist, Semex

Other challenges were improving growth rates, feed efficiency and carcass yield.

Semex took a data-driven approach. In a Minnesota project, it examined 2,040 Angus-Holstein head from birth to harvest, collecting data at all points including growth and carcass grade, with all animals genomically tested and sire verified. The study revealed significant advantages with high-value bulls from the American Angus Association’s Dollar Beef Index and Dollar A(ngus) by H(olstein) Index. “The higher genomic, higher data sires produced higher growth cattle, more efficient cattle, high carcass

value cattle. They brought more profit in feeding these cattle,” Mr Serhienko says.

Dr Cleveland says ABS developed specialty genetics to suit the beef-on-dairy market, included genetics offering more muscling, feed efficiency and carcass quality. “We’ve collected thousands of carcass records because ultimately we’re trying to create an animal using the right genetics that maximises the profitability, particularly in the finishing phase, and then also has an acceptable carcass. We started building genetics that were focused on whole-chain profitability from a beef-on-dairy space.”

Brad Gilchrist, global beef supply chain manager with **Semex**, says the decline in the native beef cow population in the US drove growth in the beef-on-dairy sector. This led the meat processing sector to look to beef-on-dairy animals to fill the gap. “And so the need for having high-performing cattle that convert feed and do well for feedlots became pretty apparent,” he says.

The importance of quality genetics means most supply chains and cattle buyers now either directly or indirectly emphasise the sires of the animals they are buying. “Most of the supply chains that are really successful have, I’m going to call it, an approved sire list,” he says. “It’s the genetics that meet the needs of what they’re trying to do. If it’s in a market where we see more yield and performance incentives or a market where we see more quality incentives, then the type of genetics might vary a little bit.”

Dairy industry offers a genetic improvement advantage

The dairy industry offers advantages for the rapid development and uptake of high-quality beef genetics. Dairy farmers have predominantly used artificial insemination for breeding for decades, so they are comfortable using beef semen in their breeding programs.

Dr Cleveland says Holsteins are also incredibly uniform, which has enabled intensive selection for desired terminal beef traits and rapid genetic progress.

“I already see the animals we’re creating today as being much better than the animals we were creating 10 years ago. I would argue that the calves we’re creating today from the genetics that we’ve developed are better on average than native beef genetics.”

Mr Serhienko says because beef on dairy is a fully terminal product, “we can be absolutely surgical with the genetics we use, and the product we can produce down the pipe is absolutely phenomenal. And we can produce it very profitably, sustainably, and it’s incredibly good.”

Mr Gilchrist says there may be potential for Australia to lead the development of genetics to suit the production of grassfed beef-on-dairy. “I strongly believe, based on the data that we’re seeing, if we’re able to select the right genetics to feed in a feedlot and get really outstanding results, we can do the same thing on a grassfed system as well. If we tailor the genetics to the management style that we have in an environment, we’re going to be able to get a lot better results than if we don’t tailor the genetics to match up with the management style.”

Lessons from the US

Mr Gilchrist says US dairy farmers initially started utilising beef genetics simply as a way to get cows pregnant – “more of a repro strategy.”

Dr Cleveland says two important technological developments – genomics and sexed semen – drove the deeper interest. The emergence of genomics



Photo courtesy of Semex.

in 2009/10 allowed dairy farmers to identify the high-value genetic females in their herds they wanted to keep to drive genetic improvement. Sexed semen was introduced at the same time, allowing dairy farmers to produce mostly female calves from those high-value cows as herd replacements. He says dairy farmers initially simply looked for beef genetics with high calving ease and high fertility, while breeding companies saw it as an opportunity to clear backlogs of beef semen. “At that time, really what they ... were looking for was a black calf the beef supply chain would give them a bonus for producing over a Holstein bull calf,” he says.

Mr Serhienko says farmers initially chose high-calving ease, high-fertility sires.

But these half-beef calves were little better than the straight Holsteins they replaced. “So basically to sum up beef-on-dairy at the very start, it was putting the square peg in the round hole,” he says. “Those half-breed calves didn’t have enough growth potential or carcass potential, they didn’t even feed as well as the straight Holstein steers. The first solutions were fine, but there was a lot of lost profit potential.”

The development of high-quality, tailored beef-on-dairy genetics is allowing all parts of the supply chain to realise that potential profit.



A+

Animal Welfare

Why this is important

- Optimal animal welfare leads to healthier, more productive animals
- Australia has an advantage with group housing systems for calf rearing
- Vital to the sustainability of industry and preserving social licence

Animal welfare is a crucial success factor for beef-on-dairy because it directly impacts the animal's overall experience, health and productivity – and therefore the quality and quantity of the beef produced. Animal welfare also underpins the sustainability of beef-on-dairy supply chains, being one of the keys to preserving social licence.

Dr Bolton points to Professor David Mellor's Five Domains framework for assessing animal welfare, which is being increasingly adopted. It sets out how health, behaviour, environment and nutrition collectively feed into an animal's overall mental state.

"Animal welfare encompasses a balance between positive and negative welfare. And if we're thinking about calf rearing, we have a lot of opportunities for welfare to be positive, but also a lot of opportunities for negative welfare as well."

Key factors for optimal animal welfare:

Housing and environment – Making sure calves are raised in a clean, well-drained, well-ventilated environment where they can nestle down into bedding is the first principle. "Later on, giving them access to outdoors is wonderful, if that's what works," Dr Bolton says. Group housing is also better for calves. "The advantages of group housing are that calves are herd animals and it fulfils their social needs, but it also has some pretty significant growth and production advantages. Calves that are housed together learn to eat solid feed earlier, and they tend to grow better because they have this group facilitation of learning."

Nutrition – It is essential calves receive adequate levels of high-quality colostrum as quickly as possible after they are born, followed by adequate quantities of milk – ideally around 20 per cent of their body weight per day – especially in the first four weeks of life. Research on dairy heifers shows that increased pre-weaning milk consumption contributes significantly to first lactation milk yield, and it is believed that feeding beef-on-dairy calves more milk in early life improves their ability to lay down muscle tissue and perform better as beef animals throughout their lives.

Health and management of painful procedures – Dr Bolton says management of painful procedures, including disbudding and castration, is a big factor for calf welfare and has a significant impact on productivity. As many beef sires used in beef-on-dairy operations are polled, many calves don't need to be disbudded – but those that do should receive best-practice veterinary disbudding

with sedation, a local anaesthetic block and non-steroidal anti-inflammatory pain relief. On castration, research now points to blade castration with local anaesthetic and non-steroidal anti-inflammatory pain relief as preferable to band castration when it comes to managing chronic pain and inflammation.

Data recording – Good data recording systems underpin optimal animal welfare. Dr Bolton says monitoring morbidity, mortality and pre-weaning and post-weaning weights is important. Consistent weight gain indicates good health and management, while variability can reveal underlying issues including with colostrum management and competition at the feeder.

Long-term planning and documented procedures – Having a long-term plan for the beef-on-dairy calves also improves animal welfare outcomes. When farmers know calves are destined for pre-identified end markets and have documented procedures for breeding, feeding and managing calves to meet the requirements of those markets, animal welfare is improved. "Having a really slick management system where you have documented standard operating procedures, where you have a team of people who are invested in the outcomes, who understand their job – we're so much further ahead," Dr Bolton says.

A+ Animal Welfare 



Dr Sarah Bolton has identified several key aspects of beef-on-dairy supply chains that need to be managed well to ensure optimal animal welfare. *Photo courtesy of Dr Bolton*

“We know that we are going to get optimal growth and productivity outcomes from these calves and flow-on welfare and health benefits.”

Dr Sarah Bolton

Preserving social licence

High standards of animal welfare play a central role in maintaining the social licence of the dairy and beef sectors. Dr Bolton says aspects such as group housing and allowing calves access to the outdoors are important when presenting an image of the Australian industry. “That is such a huge advantage over some of the status quo rearing systems that we see in other parts of the world.”

Good animal welfare also plays a key role in helping attract and retain people working in the industry. “We need to be remunerating people who are rearing calves fairly for the work that they do. We need to be making their job easier with excellent systems, excellent infrastructure, excellent support and excellent training.”

Detailed Data

Why this is important

- Data helps drive rapid development of beef-on-dairy supply chains overseas
- Key to identifying high-quality genetics
- Data can help quantify the environmental impact of the animals

Collecting detailed data has been critical to the rapid development of beef-on-dairy supply chains in both the United States and the United Kingdom. The development has been fuelled by the explosion in artificial-intelligence driven decision-making platforms and precision livestock technology.

Data collection is critical to identifying high-quality beef genetics for use over dairy animals and informing decision-making to lift growth rates and reduce finishing times. Lifting efficiency also helps lower the carbon footprint of animals produced in these supply chains.

Mr Wheal’s Breedr platform tracks every animal every step from conception to carcass, capturing data using electronic identification readers, weighheads, genomic tissue samples and carcass grading, and turning that data into insights to help producers lift performance, beef quality and profitability.

“For example, if we want to see if the dairies are giving them the right amount of colostrum to build enough immunity in the first 48 hours, we can pull blood from the calves and pay accordingly.”

Ian Wheal, Breedr

Dairy’s unique data advantage

Dairy farms are unique in their ability to collect daily data on calves because of the high-touch nature of the rearing system. Increasing use of automatic milk feeding machines and wearable devices on calves provides even more data. The daily collection of detailed data allows faster responses to issues such as illness.

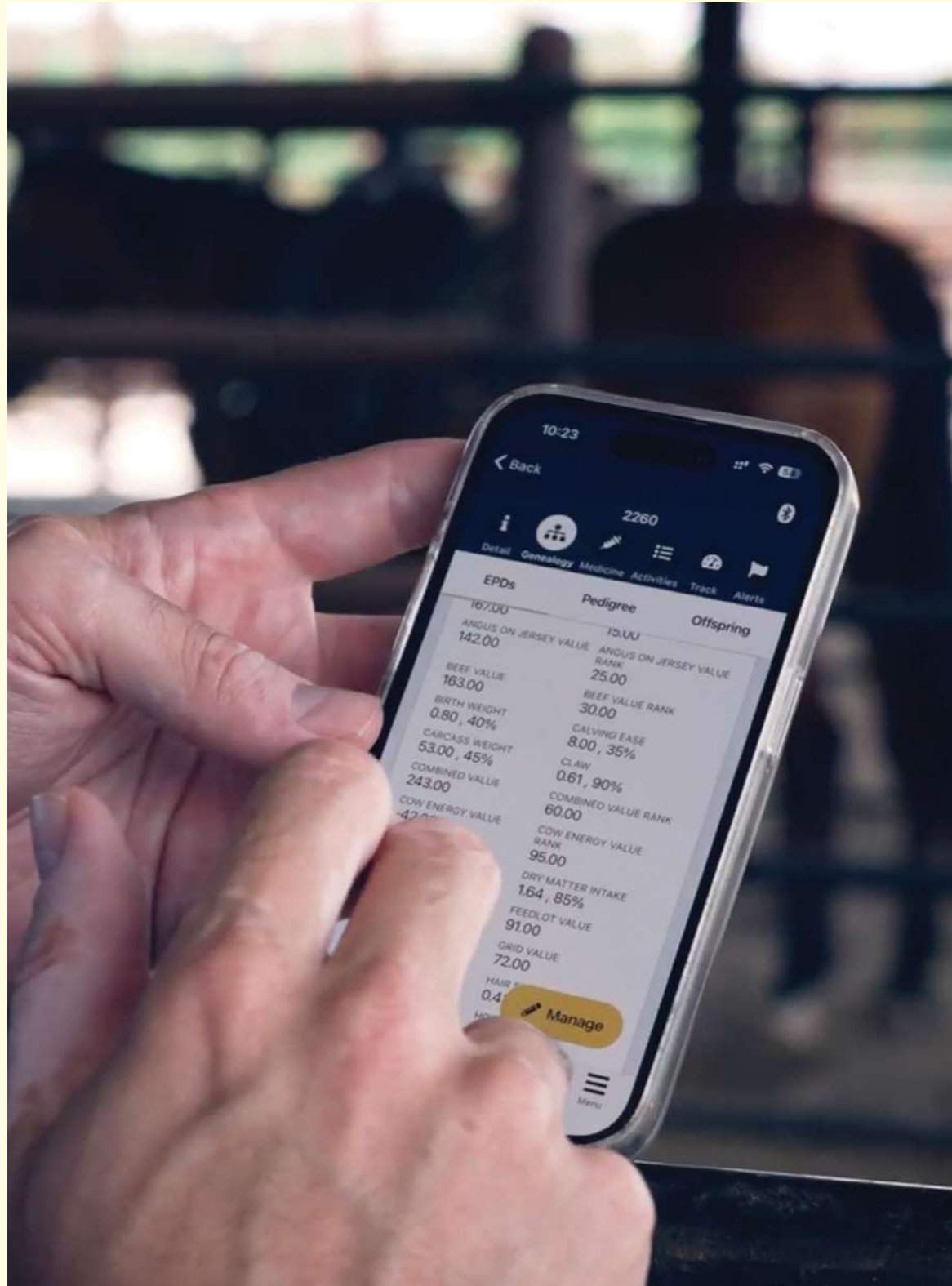
Mr Wheal says data is crucial for profitability – providing early alerts on morbidity and mortality, tracking growth rates and guiding choices on genetics

and feeding systems. It is particularly beneficial for aggregators, such as calf rearers, who are sourcing calves from multiple dairies.

The types of data that need to be collected include morbidity and mortality rates; individual growth rates; Meat Standards Australia grading and marbling grading; feedyard performance; and passive transfer (colostrum intake). The primary goal is to produce calves to a marketable weight in a healthy manner.



Detailed Data




Breedr's unique cattle management app tracks every animal every step from conception to carcass.
Photo courtesy of Breedr

Creating a sustainable value chain

In the UK, Breedr started with British supply chains and retailers to develop premium beef markets. Since its launch in 2020, the company has helped more than 3,000 UK farms digitise their herds, delivering a step-change in the efficiency of beef-on-dairy animals – finishing them five months faster and reducing the carbon footprint by up to 28 per cent per animal.

Breedr expanded to the US in 2024, working with calf ranchers, backgrounders, feedyards and genetics companies. The environmental impact and efficiency are key focuses, aiming to reduce age to slaughter and improve traceability. The company has also started working in Australia, using its software and carcass data feedback in a small calf-rearing project with dairies.

Breedr says the latest research indicates well-managed beef-on-dairy supply chains have the potential to be 50–60 per cent more energy efficient than traditional native beef herds.



Conclusion: Beyond the Breed

When this report opened, it described beef-on-dairy as rapidly evolving from concept to commercial reality. The evidence gathered across these pages confirms that evolution is well underway – and that Australia has both the foundations and the opportunity to be a meaningful part of it.

The pilot program led by FMG Global and McDonald’s proved that beef-on-dairy animals, raised with the right genetics, nutrition and care, can satisfy premium markets across every pathway – grassfed, grainfed and everything in between. Two independent lifecycle assessments have confirmed that these animals carry a significantly lower emissions footprint than conventional beef, without relying on offsets. Consumer research has validated what processors in the US and UK have known for some time: that beef-on-dairy is not a secondary product. It is a quality-driven offering in its own right.

“Beef-on-dairy systems in Australia offer a clear opportunity to improve how beef supply chains have traditionally operated. With modest changes to existing processes – supported by simple data and clear collaboration – participants across the value chain can benefit through greater business certainty, more consistent animals, improved forward price and product visibility, and ultimately better meat quality. In our view, the growth and adoption of beef-on-dairy in Australia will represent one of the most significant structural shifts in the beef industry so far this century.”

Connor FitzGerald, CCO, FMG Global

The supply chain case studies in this report – from Greenham’s grassfed program in Tasmania to Harvest Road’s emerging program in Western Australia, from Allied Beef’s feedlot experience in eastern Australia to the Buitelaar Group’s fully integrated model in the UK – tell a consistent story.

Success is not accidental. It is built on deliberate choices: the right genetics, rigorous calf rearing, clear market specifications and, above all, collaborative relationships between every link in the chain.



Connor FitzGerald, FMG Global – CCO

That last point cannot be overstated. The dairy and beef industries in Australia have historically operated in separate orbits, with different price cycles, different mindsets and different measures of success. Bridging that gap – as Andrew Ralph, Jessica Mitchell, James Maclean, Monique Bryant and every other contributor to this report has described – requires a genuine shift from transactional thinking to long-term partnership. It is not easy. But the businesses that have made that shift, here and overseas, are the ones building the most resilient and profitable supply chains.

The five building blocks identified in this report – robust relationships, sound nutrition, great genetics, A+ animal welfare and detailed data – are not aspirational. They are operational. They are being applied right now in supply chains that are delivering results. The task for the Australian

industry is to adopt them systematically, learn from the experience of those who have gone before, and resist the temptation to cut corners in the early stages when the margins are tightest and the habits are being formed.

The goal of 100,000 beef-on-dairy animals processed annually in Australia by 2030 is ambitious. But it is grounded in a clear understanding of what is required to get there. The genetics are improving rapidly. The pilot data is compelling. The market demand – domestic and export – is real. The industry bodies are aligned. The processors, feedlots, calf rearers and dairy farmers who have contributed to this report are engaged and, in many cases, already acting.

Beef-on-dairy represents more than a production shift for individual businesses. It represents a more integrated, more sustainable and more resilient approach to protein supply for the Australian industry as a whole – one where the dairy herd and the beef supply chain work together rather than in parallel, where data flows from conception to carcass, and where every animal that enters the system is given the best possible chance to fulfil its potential.

The breed is just the beginning. What comes next depends on the decisions made now – by genetics companies, dairy farmers, calf rearers, feedlots, processors and the industry partners who connect them. FMG Global and McDonald’s are committed to leading that work in Australia.

We invite the industry to join us.

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Beyond the Breed: Unlocking Australia's Beef-on-Dairy Potential

2026 Report