FEEDBACK

MLA – FOSTERING PROSPERITY

SPRING 2023

mla
MEAT & LIVESTOCK AUSTRALIA

FEEDBACK

MLA fosters the long-term prosperity of the Australian red meat and livestock industry by delivering world-class research, development and marketing outcomes.

Cover (page 7): Dan and Georgia Slaney with their daughter Gabrielle at 'Amber Station', Queensland, where they're driving herd productivity with a targeted phosphorus strategy.

Have your say!
We'd love to hear from you.

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A note from the MD

Welcome to the spring edition of *Feedback* magazine.

MLA is celebrating our 25th anniversary – we reached this fantastic milestone on 1 July.

In the quarter of a century since the merger of the Australian Meat and Livestock Corporation and the Meat Research Corporation in 1998, MLA has delivered significant value to the industry.

Changing industry

The red meat and livestock sector of today is a highly traceable, quality assured industry with preferential trade access into the highest value markets around the world. MLA has had a huge impact on this – looking at the big drivers of change, we either had a significant role in delivering them, or developed and implemented them.

I always reflect on these achievements in the context of what the industry structure looked like back in 1998. Livestock Production Assurance (LPA) did not exist, it was the early days of Meat Standards Australia (MSA), red meat marketing sat with the states and was mainly domestic-focused, and there was only one free trade agreement (with New Zealand).

Now, Australia has one of the best livestock traceability systems in the world. We are one of only a few countries with an on-farm and feedlot quality assurance program with LPA. We have market information which covers all categories and all markets. We have an eating quality system – MSA – which provides quality product to consumers around the world. We now have 16 free trade agreements with our major markets globally.

We should be proud of what has been achieved – and we have no plans to slow down.
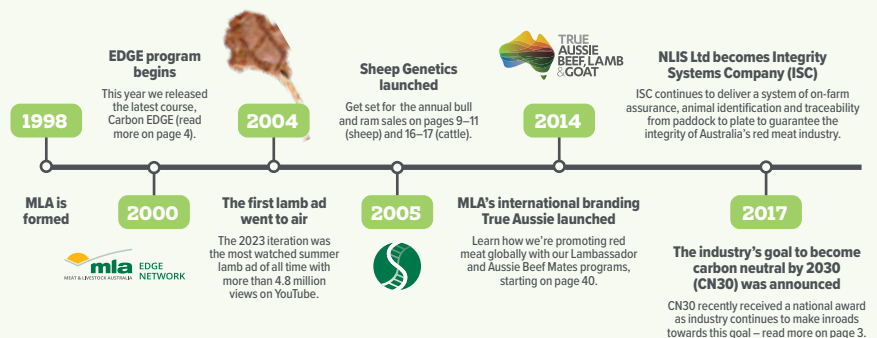
In the past 12 months we have:

- launched Aussie Meat Academy
- developed world-first beef collagen supplements
- reached an Australian – UK Free Trade Agreement
- launched MLA's carbon calculator
- launched the Australian Feedbase Monitor
- developed the eNVD app.

Team effort

Up to 1 July this year there were still nine members of our team who were at MLA in the beginning: Bruce Blades, Veronique Droulez, Deanna Jones, Murray Patrick, Cameron Allan, Samantha Jamieson, Shuichi Kitano, Heidi Brunker and myself. A few of us have left and come back over the years, but special recognition should go to Bruce, Cameron and Kitano who have been part of MLA for the entire 25 years.

I look forward to seeing what is ahead for MLA, as we continue to invest in world-class research, development and adoption projects to increase the productivity and profitability of Australia's cattle, sheep and goat businesses. ■

A few highlights from the last 25 years:

1998 EDGE program begins
This year we released the latest course, Carbon EDGE (read more on page 4).

MLA is formed

2000 mla EDGE NETWORK

2004 Sheep Genetics launched
Get set for the annual bull and ram sales on pages 9–11 (sheep) and 16–17 (cattle).

The first lamb ad went to air
The 2023 iteration was the most watched summer lamb ad of all time with more than 4.8 million views on YouTube.

2005

2014 TRUE AUSSIE BEEF, LAMB & GOAT

MLA's international branding True Aussie launched
Learn how we're promoting red meat globally with our Lambassador and Aussie Beef Mates programs, starting on page 40.

NLIS Ltd becomes Integrity Systems Company (ISC)
ISC continues to deliver a system of on-farm assurance, animal identification and traceability from paddock to plate to guarantee the integrity of Australia's red meat industry.

2017 The industry's goal to become carbon neutral by 2030 (CN30) was announced
CN30 recently received a national award as industry continues to make inroads towards this goal – read more on page 3.

Jason Strong MLA Managing Director
✉ Have a question for me? **jstrong@mla.com.au**

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This season...

Watch
Getting started
with breeding
values videos:
genetics.mla.com.au

Learn
MLA's carbon
management
e-learning modules:
elearning.mla.com.au

Read
Bushfire
preparation
manual:
mla.com.au/
bushfire-manual

Save the date
23 November 2023

MLA Updates

Sustainability from paddock to plate

and **Annual General Meeting**

This year's MLA Updates will be held on 23 November, at Bendigo Showgrounds, Victoria.

They will focus on sustainability from paddock to plate.

It will be a chance to get up-to-speed on MLA investments and progress against our *2025 Strategic Plan*.

Come along for a day of presentations, displays and demonstrations of solutions and technologies which embrace sustainability and set red meat and livestock businesses up for success.

The MLA Annual General Meeting will be held on the same day from 3.30pm AEDT.

For more information, visit MLA's news and events page: **mla.com.au/ news-and-events**

Updated industry projections

This year, Australia's sheep flock and its breeding ewe numbers reached their highest levels since 2007 at 78.75 million and 46.14 million head respectively, according to the July update of MLA's sheep projections.

It follows three consecutive years of above-average rainfall in Australia's sheep regions, which has driven an exceptional post-drought recovery.

The outcomes of this strong improvement in sheep numbers will deliver strong volumes of finished-weight stock to market.

The national cattle herd will reach its highest level since 2014 at 28.7m head, according to the June update of MLA's cattle industry projections.

Beef production is forecast to strongly increase this year as a result of improvements in processing capacity so far in 2023, higher slaughter volumes and historically elevated carcase weights.

Read the latest sheep and cattle industry projections at **mla.com.au/prices-markets/trends-analysis**

Increase your productivity and profitability

Have you tuned into the *Productivity & Profitability* webinar and podcast series? It's a source of new and topical information to help southern producers increase the success of their businesses.

As well as hearing from a diverse range of expert speakers to aid on-farm decision making, producers can access relevant resources and MLA programs to continue their learning journey.

Live webinars are held monthly, and you can catch up on any you've missed at **mla.com.au/pandp**

At the end of every season, a podcast episode will be released featuring each of the webinar speakers.

Podcasts from the winter 2023 *Productivity & Profitability* series will be available in early September.

To listen, simply search '*Productivity & Profitability*' on your preferred podcast streaming platform.
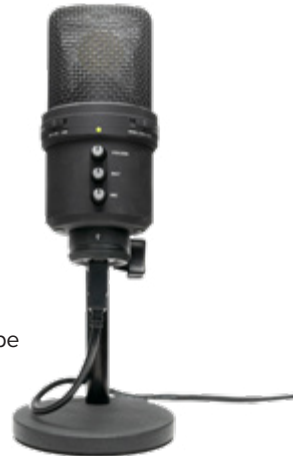
Good meat on show

MLA showcased the story of Australian red meat and livestock from paddock to plate at this year's Royal Queensland Show – the Ekka.

MLA staff and our Red Meat Ambassadors took an estimated 3,200 Ekka visitors through an immersive 360° virtual reality tour of Australian beef and lamb production and explained why Australia produces the greenest and cleanest red meat in the world.

The series of videos featured various aspects of the beef and lamb supply chains, including producers, feedlot managers, processing facility managers, butchers and chefs. The addition of touchscreens to this year's tour gave participants the option to select icons to find out more information on specific topics.

The *Paddock-to-plate stories* at events such as the Ekka are valuable to help link consumers with the positive stories of the industry. MLA will also promote the *Paddock-to-plate stories* through the Australian Good Meat website and to schools for a deeper learning experience.

goodmeat.com.au

MLA staff and Red Meat Ambassadors took Ekka visitors through the red meat paddock-to-plate journey.

Top honours for CN30

The Australian red meat industry's commitment to sustainability has been recognised with a prestigious national award.

The carbon neutral by 2030 (CN30) initiative – a collective industry effort driven by MLA – won the ESG Enabler special award in the agriculture category at this year's *Australian Financial Review* Sustainability Leaders awards.

These awards recognise organisations investing in sustainable innovations which are leading to environmental and social benefits alongside business outcomes.

MLA Managing Director, Jason Strong, said CN30 was recognised globally for its leadership and vision setting for the Australian red meat and livestock sector, especially for the way in which it strives for innovation that matches productivity outcomes with sustainability goals.

"CN30 builds on the existing sustainability credentials of the Australian red meat industry," Jason said.

"It is highly ambitious with clear targets for the industry, hand-in-hand with the industry's goal of doubling the value of red meat sales by 2030.

"This award is a strong acknowledgement of progress to date and another clear message the Australian livestock sector is delivering positive environmental outcomes."

Industry progress

More than $140 million has been invested since the industry embarked on the CN30 journey in 2017, and significant inroads towards the goal have been made.

A research report recently released by CSIRO and MLA showed the Australian red meat and livestock industry has reduced its net greenhouse gas emissions (GHG) by 65% since 2005.

Using information primarily from the 2020 Australian National Greenhouse Gas Inventory, the total GHG emissions attributed to the red meat industry were 51.25 Mt of carbon dioxide equivalent GHG in the year 2020.

This is a 6.4% decrease compared to 2019 and a 65% decrease compared to the baseline year of 2005. The red meat industry's emissions represented 10.3% of national total GHG emissions in 2020.

Jason said the reduction in red meat industry GHG emissions in 2020 was partly explained by reductions in livestock numbers following the years of drought leading into 2020.

"The number of livestock on the ground has an influence on industry's overall emissions, and we know these numbers will fluctuate with seasonal and market conditions," he said.

"This highlights the importance of MLA's investment in emissions reduction strategies to reduce enteric methane and other agricultural emissions along the value chain.

"Through CN30, we're investing in innovation and technology which will help our industry be carbon neutral while also maintaining productivity.

"On-farm changes which result in a reduction in net emissions often create co-benefits such as increased productivity and profitability, long-term business sustainability, improved biodiversity and other ecosystem service values.

"These co-benefits converge to build enduring prosperity for red meat industry stakeholders."

The new research report examined the production of beef cattle, sheep for meat and goats, as well as the domestic processing of these animals.

Emissions were attributed to the red meat industry based on animal numbers, feed intake, livestock processed, and resource use. It is part of the industry's work in annually benchmarking its GHG footprint, which has been occurring since 2015.

Next steps

The *Greenhouse gas footprint of the Australian red meat production and processing sectors 2020* report highlighted areas for improvement such as including methods to estimate emissions which are currently excluded from the calculation. These include the transport of livestock and emissions associated with crop production for feed.

"As we move closer to 2030, MLA and the red meat industry are ready to further reduce emissions and support producers in building a stronger, more sustainable future," Jason said. ◼

TOOLBOX

📍 MLA has released its *Sustainability Impact Report 2023*. Scan this QR code or visit **mla.com.au/sustainability-hub** to learn more about the industry's reduction in methane emissions, new tools for producers, and improvements to integrity systems and biosecurity.

📍 Scan this QR code to read the full CSIRO/MLA report *Greenhouse gas footprint of the Australian red meat production and processing sectors 2020*.

📍 MLA's carbon calculator: **mla.com.au/carbon-calculator**

ⓘ ⊙ CN30 **mla.com.au/cn30** ✉ Julia Waite **jwaite@mla.com.au**

Giving producers the carbon edge

MLA is in the final stages of developing Carbon EDGE – the latest addition to the well-known EDGE network training program – with pilot workshops starting in October.

The red meat industry's target to achieve carbon neutrality by 2030 (CN30) will only be realised with the adoption of emissions avoidance and carbon storage practices and technologies.

Despite wide interest in these, producers have indicated they are looking for more information to make sense of the options available to them and how these could be applied within their businesses. The Carbon EDGE training package was developed to address these knowledge and skill gaps.

Carbon EDGE will run over two days and provide independent research and fact-based information.

Carbon EDGE has been developed by industry, for industry. The product has been developed by a working group of producers, advisors and technical experts from across Australia.

Pilot workshops for Carbon EDGE will be delivered throughout Australia in late 2023 to seek feedback and further input from producers, followed by the full roll out of the program in 2024.

Carbon EDGE pilot workshops

- **Bunbury WA**
  19–20 October
- **Hay NSW**
  31 October–1 November
- **Mackay QLD**
  9–10 November
- **Alice Springs, NT**
  28–29 November
- **Benalla VIC**
  5–6 December

Find out more at **mla.com.au/carbonedge**

⌃ A pasture dieback-affected paddock of buffel grass in Baralabra, Queensland

Ground-up focus for northern productivity

A new $24.4 million partnership between Queensland Department of Agriculture and Fisheries (DAF) and MLA has its sights set on three significant challenges to beef productivity in northern Australia: pasture dieback, land condition decline and pasture rundown.

The Queensland Pasture Resilience Program (QPRP) will incorporate research, development and extension activities across Queensland over the next five years. It's also supported by the Australian Government through the MLA Donor Company (MDC).

As well as improving land condition through sustainable grazing land management, the program will encourage greater adoption of pasture legumes, which reduce methane emissions intensity.

This will support the red meat industry's goal to be carbon neutral by 2030 (CN30) – see previous page for more information – and the Queensland Government's *Low emissions agriculture roadmap 2022–2032*.

Improving grazing businesses

The QPRP will help grazing businesses improve:

- land condition and carrying capacity
- animal growth and reproduction rates
- capacity to manage drought
- carbon market opportunities and methane reduction.

In particular, the program will focus on:

- best-practice grazing land management
- adoption of tropical/sub-tropical pasture legumes
- development of new pasture legume varieties
- optimum fertilising of sown pastures
- pasture dieback management.

FutureBeef

The northern Australian beef industry will also continue to receive support to deliver high-quality, sustainably produced products to consumers around the world, with the renewal of the FutureBeef program.

The $3.66 million program is a partnership between the Queensland, NT and WA governments, MLA and the Australian Government through the MLA Donor Company.

Backed by world-leading research and development, FutureBeef provides beef producers with information to improve the resilience, profitability and sustainability of their businesses.

FutureBeef produces webinars, case studies, videos and other resources on topics such as animal production, health and welfare, grazing land management, business management, and research and development. ∎

Find out more at **info@daf.qld.gov.au** and **futurebeef.com.au**

Seasonal action plan

Phosphorus turns pastures into profit

Phosphorus (P) is an essential nutrient for cattle. Cattle which don't receive adequate P to meet nutritional requirements will have low productivity.

P deficiency in cattle is a major issue in northern Australia due to widespread soil and pasture P deficiencies.

MLA recently released an updated P manual – *Phosphorus management of beef cattle in northern Australia (Second edition)* – which offers evidence-based solutions and recommendations on how to assess and address the risk of P deficiency in cattle.

Effective P supplementation will deliver significant productivity and profitability benefits for producers.

A dietary P deficiency reduces feed and energy intake resulting in lower growth and reproduction rates even when the energy and protein content of the diet is adequate. This is particularly relevant for weaners and cows during late-pregnancy or lactation.

P pays

In P-deficient areas, supplementing breeding and growing herds with P provides a return on investment within one to four years, depending on stock class and the severity of the deficiency.

Supplementing on acutely P-deficient soils is profitable in conjunction with best practice herd and land management. Feeding P in the wet (growing) season gives the greatest economic benefit on P-deficient country.

Give P when the grass is green

An abundance of green grass doesn't equal adequate dietary P consumption. The reduced feed intake of P-deficient cattle means they won't make the most of the available energy and protein in the pasture during the growing season.

Effective P supplementation improves beef enterprise profitability through:

- reduced mortality rates
- cattle sold earlier and/or at heavier weights
- increased body condition score of breeders
- increased milk production, weaner weights and pregnancy rates
- a higher proportion of heifers reaching critical mating weights and at a younger age
- cow weights up to 100kg/head heavier.

If P is fed over the wet season on deficient country:

- young growing stock can increase their growth by up to 90kg above base growth
- breeders can increase weaning rates by 10–30%
- mature breeders can maintain an additional 100kg weight advantage over un-supplemented cows. ■

Benefits of P

Increased intake improves body condition

Enables proper rumen function.

Increased milk production

Pregnant and lactating cows draw P from their bones to meet requirements. This mobilised P needs to be replenished.
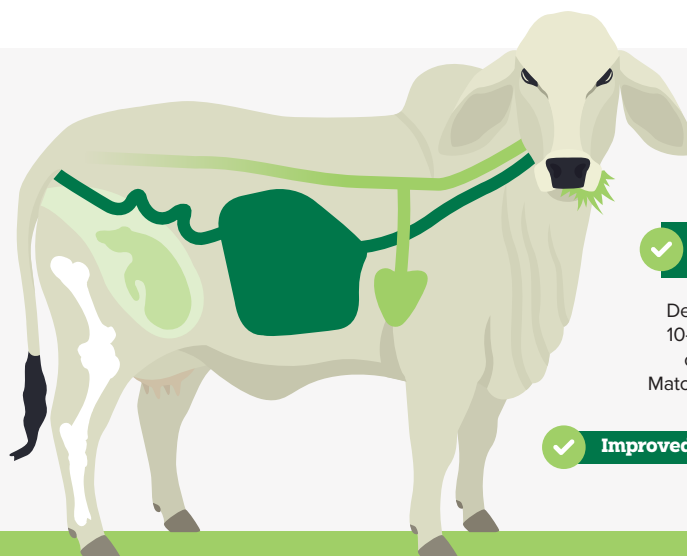
Increased productivity and profitability

Deficient cattle fed P will eat 10–30% more pasture when offered a P supplement. Match stock to carrying capacity.

Improved reproductive efficiency

P-deficient cattle may:

- ⚠ have reduced feed intake and not meet growth, weaning or breeder condition targets
- ⚠ chew old bones, show peg leg or break bones during handling
- ⚠ die from botulism

ℹ Simon Quigley **s.quigley@cqu.edu.au** ✉ Tim Schatz **tim.schatz@nt.gov.au** ✉ Lindsey Perry **lperry@mla.com.au**

Easy P a solution to wet season access

The NT Department of Industry, Tourism and Trade's Tim Schatz, is keen to help producers overcome wet season access difficulties in providing much-needed P.

He recommends the 'Easy P' strategy – which involves putting out enough P to last the entire wet season – as an effective solution.

"Include P in dry season supplement and work out how much P your cows will need to last the wet season, then put out bulka bags of supplement or lick blocks before it starts raining – that way you avoid impediments such as creeks and boggy roads," Tim said.

In a research project led by Tim at Kidman Springs in the NT, a herd fed P using the Easy P method showed nearly identical weight gains as a herd which received a traditional wet season supplementation program.

Higher re-conception

Maiden heifer pregnancy rates in both study herds were identical at a high 95%. However, the following year, the re-conception rates in first-lactation heifers were higher in the Easy P treatment:

- Easy P – 80% re-conception
- traditional program – 67% re-conception.

"The reason Easy P also includes P in the dry season supplement is so cows can top up their depleted P stores after weaning, ready for their next lactation," Tim said.

"Lactation draws P from bones and tissues, so supplementation is vital in P-deficient country."

Increased growth

Another research project highlighting the productivity benefits of P supplementation was led by Simon Quigley. His work at The University of Queensland demonstrated increased growth and feed intake of steers in response to increasing P in the diet when protein and energy were not limiting.

"Producers will see a quick response when P-deficient steers are provided with a P supplement at the start of the wet season. It's important to provide P as early in the wet season as possible," Simon said. ∎

Scan the code to watch Tim and Simon's recent FutureBeef webinars on their findings.

Simon Quigley's research has shown the productivity benefits of P supplementation.

Tim Schatz said the Easy P strategy provided producers with a way to overcome the logistical difficulties of supplementing with P in the wet season.

No surprise year-round P drives productivity

Queensland cattle breeding operation 'Amber Station' is an example of how year-round phosphorus (P) supplementation, along with property-wide herd and infrastructure improvements, can deliver significant productivity benefits.

The Mount Surprise property was purchased by Werrington Cattle Company in 2019. Since then, managers Georgia and Dan Slaney have improved the productivity and health of the existing P-deficient herd.

Overcoming the challenge of accessing the property during the wet season was a major factor in their successful P strategy.

Turning the tables

The Slaneys tackled the herd's P deficiency by feeding bulka bags of both wet and dry season supplement side-by-side – a strategy used on other Werrington Cattle Company properties with success.

Dan recalled how 2,000 breeders consumed 22t of P supplement in three weeks, a rate he had never previously witnessed. The cattle quickly recovered condition and within a few weeks had significantly reduced their supplement intake.

Infrastructure key

Investment in yards, fences and water has further improved carrying capacity and overall efficiency at Amber Station.

Additional fencing has allowed pasture spelling, reduced grazing pressure and supported herd expansion from 2,000 breeders in 2019 to 3,600 breeders at present. Total stock numbers, including breeders, joiner heifers and weaner heifers, increased from 3,300 in 2019 to 6,100 in 2023.

Road upgrades have improved access for more of the year.

An economic analysis conducted in 2020 indicated the expected return to the total funds invested in the property purchase, livestock, plant and equipment, and property development over the first decade could average 4–5%/year using long-term cattle prices and costs.

Cows and calves consuming dry season supplement with phosphorus at 'Amber Station'. Image: Emily Corbett, QDAF.

Overcoming access issues

Dan and Georgia use bulka bags to give cattle access to enough P to get them through the wet season – they also feed P year round, and have various recipes depending on seasonal variations.

"Cattle are less likely to gorge wet season P when they're fed dry season supplements with P in the months leading up to the wet season," Georgia said.

"It means they're getting a steadier but adequate supplement intake over the growing season."

Dan emphasised that providing P supplement year-round allowed cattle to self-regulate their intake.

The strategy is two-fold:

- **Prior to the wet season starting:** 250kg or 400kg bags are placed across paddocks, for wider distribution of supplement when cattle are scattered due to surface water. Dan puts out about six months' worth of the wet season mix before the wet commences and aims to have it all out by November.
- **During the wet season:** when vehicle access is limited during the wet season Dan has on a few occasions transported 25kg bags by helicopter to replenish existing supplement sites.

Georgia and Dan include 5% lime in the mix so a surface crust forms to weatherproof the recipe.

Dan said the quality of P is important.

"It makes a big difference in terms of actual absorption into the bloodstream and the palatability of the lick."

Table 2: A comparison of the business before and after the property's five-year development plan was implemented

Amber Station	Before P	Since P
Total adult equivalents	5,200	8,742
Total cattle carried	6,196	8,259
Total breeders mated and kept	4,158	4,860
Total calves weaned	2,012	3,945
Weaners/total cows mated	47%	66%
Overall breeder deaths	8%	2%
Female sales/total sales	34%	48%
Total cows and heifers sold	519	1,810
Total steers sold	1,006	1,972
Average female price	$696	$774
Average steer price	$366	$428
Direct costs excluding bulls	$104,307	$475,747
Bull replacement	$78,359	$96,842
GM per adult equivalent	$105	$191

Table 1: The 'Amber Station' wet season lick recipe

Ingredient	Inclusion rate
GranAm™	12%
Kynofos 21	48%
Lime	5%
Rumigro	0.5%
Salt	34.5%

P program

Table 1 outlines Amber Station's wet season supplementation approach.

Key aspects of their year-round supplementation program include:

- dry season urea-based supplements include approximately 10–15% Kynofos 21 which will supply around 3g of P/head/day to heifers and 5g of P/head/day to breeders during the dry season
- 10g of P/day for each cow-calf unit during wet season and targeted dry season supplementation (with P) for weaners and replacement heifers
- GranAm™ helps fill the protein gap as pasture quality declines later in the wet season.

Dan and Georgia have seen significant benefits from this supplementation approach, including:

- increased weaning rates – from the initial 47% to 66% in 2020 (see Table 2), and further to 83% in 2022
- reduced breeder mortality – from 8% to 2%
- improved female and steer cattle weights and value.

The overall contribution of P supplementation to the predicted increase in gross margin/adult equivalent on Amber is significant (Table 2). Since this analysis was done in 2020, Dan has seen ongoing improvements.

In recent times, Dan and Georgia have increased P levels in the lick and keep a close eye on their supplementation program to ensure effective results. Their current wet season mix recipe is 60% phosphorus.

"I'm always monitoring and trying to improve the lick," Dan said.

"Supplementation is one of our largest direct costs so it's something I keep a real watch on to make sure we get a good return on investment." ■

ℹ ✉ Dan and Georgia Slaney **amberstation19@gmail.com** ⊙ Lindsey Perry **lperry@mla.com.au**

Dan and Georgia Slaney with daughter Gabrielle, at 'Amber Station'.

SNAPSHOT

GEORGIA AND DAN SLANEY (MANAGERS), Werrington Cattle Company 'Amber Station', Mount Surprise, Queensland

AREA
104,000ha

ENTERPRISE
6,100 Brahmans (3,600 breeders)

PASTURES
Native pastures and shrubs, Seca stylo and other introduced stylos

SOIL
Decomposed granites, sandy country, watercourse frontages, basalt soils

RAINFALL
800mm

SEASONAL ACTION PLAN

❗ Order P supplement early, prior to the break of season in the north.

❗ Ensure you order enough for the entire wet season.

❗ Put necessary infrastructure such as sheltered lick troughs in place ahead of the wet season.

TOOLBOX

🔹 MLA's *Phosphorus management of beef cattle in northern Australia, second edition:* **mla.com.au/p-manual**

🔹 MLA's P hub: **mla.com.au/phosphorus**

🔹 Try the FutureBeef lick intake calculator by scanning the QR code.

🔹 Is your property at risk of P deficiency? Scan the QR code to see Queensland's phosphorus map at TERN Australia.

JB and Alison Tancred are excited about the potential of new genetic tools in the G.R.A.S.S. Merino flock they manage. Image: Kirsty Fisher Photography.

A grassroots approach to genetic gain

JB and Alison Tancred.
Image: Kirsty Fisher Photography.

With spring ram sales underway, NSW Merino breeder JB Tancred opens the gate to his breeding strategy.

JB and his wife Alison manage G.R.A.S.S. Merinos, a Poll Merino stud at Gulargambone, central west NSW. The stud, which celebrates 50 years of operation this year, began as a breeding cooperative. It is owned by 11 breeders, who started the stud to develop a more scientifically objective way of selecting their rams.

JB and Alison also have their own commercial farm, located 20km from the stud property.

Clear goals

"The stud production goal is the dual-purpose ram," JB said.

"We have a strong emphasis on clean fleece weight, but also reproduction and growth rates.

"We're also very focused on welfare traits, particularly the transition to non-mulesing. Early breech wrinkle is a very important trait for us, but also visual traits such as wool quality."

Because of its historical philosophy around objective measurements, G.R.A.S.S. has always measured sheep, initially through fleece weighing and basic body weighing.

These measurements have become more sophisticated as the science has advanced, including the introduction of Australian Sheep Breeding Values (ASBVs), genomic testing and the inclusion of frame structures and early breech wrinkle into their index.

Welfare traits

"Putting the welfare traits into a production index has been really important for us," JB said.

"Breeding values are essentially based on an economic value, and that economic value relative to other traits.

"Obviously, to cease mulesing, you need the breech area to be as plain as possible.

"We score their breeches from one through to five, and this visual score is turned into an ASBV.

"However, putting this into an index was challenging because there's no real relative economic value.

"We'd like to think we get paid for non-mulesed wool, but you don't specifically get paid for the fact that your sheep are non-mulesed — so it's very hard to put a relative economic value on a trait like early breech wrinkle."

Apart from the early breech wrinkle target, the Tancreds are also endeavouring to increase clean fleece weight, fertility and growth rates, and reduce micron.

"We're trying to produce a ram that's profitable, but also sustainable into the future, and which carries all those traits," Alison said. "We're also trying to ensure that we rear as many lambs as possible and ensure the sheep are happy and healthy."

Getting the balance right

Alison said the indexes allow them to manage potentially antagonistic traits, when clean fleece weight is such an important profit driver.

"When you're selecting for clean fleece weight, your fibre diameter and early breech wrinkle can increase," she said. "You really need to be using an index to try to bypass all of that from happening."

JB and Alison are excited about the new industry indexes that were recently released — turn the page to learn more about these and other genetic tools.

"I think what the geneticists and MLA broadly have done over the past 12 months for the Merino indexes is going to be really important for the industry," JB said.
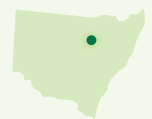
"These new indexes are excellent, and they align with most of the breeding objectives of the industry moving forward — continuing to increase production, while taking animal welfare and sustainability traits into account." ∎

SNAPSHOT

JB AND ALISON TANCRED,
Gulargambone, NSW

AREA
900ha (stud) and 3,200ha (commercial)

ENTERPRISE
Poll Merino seedstock producer

PASTURES
Improved pastures are lucerne, chicory and medic-based, along with some native and subtropical grasses

SOIL
Range from sandy loam to grey self-mulching soils

RAINFALL
525mm

LESSONS LEARNT

✔ Set your breeding objectives and goals, then work out exactly the type of animal you would like to be producing for your business.

✔ Once you have your objectives, align yourselves with a stud which has similar breeding objectives.

✔ Even if an animal is high on your index, look at the individual ASBVs to ensure you don't choose a sheep which doesn't align with your breeding objective.

✔ Do a visual assessment to make sure the sheep passes the grade.

ℹ MLA genetics hub **genetics.mla.com.au** ▸ BREEDPLAN **breedplan.une.edu.au**
✉ JB Tancred **themaze@activ8.net.au** ✉ Sarita Guy **sguy@mla.com.au** ✉ Peta Bradley **pbradley@mla.com.au**

Fire up your flock with new genetic tools

New research indexes are available for commercial Merino producers this ram sale season. They include not only economic traits, but functional and sustainability traits as well.

Developed by the Animal Genetics and Breeding Unit (AGBU), based at the University of New England, these updated indexes allow producers to balance genetic improvement across a range of traits.

"The existing Merino indexes have allowed the industry to make excellent genetic progress in key traits, such as fleece weight, reproduction, growth rates and fibre diameter," MLA's Sheep Genetics Manager, Peta Bradley, said.

"Through industry surveys, we identified the need to update the indexes to include additional health and welfare traits producers consider when making selection decisions, such as breech wrinkle, breech cover, dag and worm egg count.

"We have Australian Sheep Breeding Values (ASBVs) for all these traits, so it was a matter of incorporating those into an index."

Target reproduction

MLA also recently developed new reproduction component traits, which allow producers to target specific components of the reproductive cycle.

For example, previously a producer could select for number of lambs weaned, however this can be influenced by several factors.

⌃ MLA's Sheep Genetics Manager Peta Bradley.

The new indexes allow separate weighting of the various components: conception, litter size and ewe rearing ability.

Across reproduction systems, the weighting of those component traits in an index might vary. In some systems, the producer might want to increase litter size, while continuing to improve ewe rearing ability. In other systems, the emphasis on litter size might not be as high.

"This development will allow us to incorporate new traits more easily into indexes as they become available," Peta said.

"A great example is the development of methane and feed intake breeding values, as part of MLA's investment through the Emissions Avoidance Partnership.

"When those traits become available, we can incorporate them easily into our industry indexes."

Accelerated adoption

In late 2022, the millionth genotype was added to the Sheep Genetics genomic database, reflecting an exponential increase in the amount of genotyping that's occurring in the sheep industry, particularly in Merinos.

"What genomics allows producers to do is select animals earlier in life for hard-to-measure or later-in-life traits," Peta said.

"For example, you can take a genotype from a seven-month-old ram lamb and get better predictions of traits such as adult wool production or reproduction of his daughters."

The advantage of genotyping also applies to terminal sheep, where eating quality is an important trading objective.

> "We're driving genetic gain at a seedstock level faster than ever before. If a commercial producer is using ASBVs and indexes to purchase rams, they're piggybacking off that accelerated genetic progress."

Practical strategies for ram buying

Australian Sheep Breeding Values (ASBVs) are an essential tool to apply when deciding on a ram to purchase, alongside visual and structural assessments.

ASBVs exist for many different traits that impact the performance and profitability of a flock, including growth, carcase and eating quality, wool quality, reproduction and health.

Set breeding objectives

Aligning ASBVs with your breeding objectives can have a substantial positive impact on your flock's performance and profitability well into the future.

A breeding objective simply describes your future production goals. Knowing your future direction helps you choose the ram with the right genetics to achieve your goals.

To decide on your breeding objective, start by identifying your flock's current performance, target market and profit drivers. Balance your objective to include all factors that influence productivity and profit.

With your breeding objectives identified, you can match the production traits of importance with the ASBV traits which will deliver the genetic improvements you need (Table 1).

Selection indexes

From here, identify an index which best matches your breeding objectives. Indexes balance and weigh ASBVs into a single figure for different production systems. Using just one number, they rank animals by prioritising traits which drive the profit for the production systems and market that you're targeting. The higher a sheep's index value, the higher its overall economic contribution to that production system.

Once you have an industry index, search the catalogues and online databases to find rams with ASBVs which match your desired breeding values and indexes. Look at individual breeding ASBVs, shortlist suitable rams and decide on your budget. Discuss with the ram breeder the traits that they're recording and selecting for.

On sale day, visually assess the structure and health of your shortlisted rams. Once you have your revised list, bid on the rams you require, and stick to your budget.

Table 1: Matching production traits of importance with ASBV traits

Production traits	Matching ASBV selection traits
Turn-off weights	Post-weaning weight
Weaning percentages	Weaning rate
Increased wool sales at current micron	Clean fleece weight and fibre diameter
Parasite resistance	Worm egg count

"Through the MLA Resource Flock, we've genotyped and phenotyped a lot of animals for eating quality," Peta said.

"By genotyping a young ram lamb or terminal ram lamb, you can get an earlier and more accurate prediction for traits such as intramuscular fat or shear force, and use that information to drive genetic progress within your flock."

Flock profile

Another tool currently available for commercial Merino producers is the Flock Profile test. The producer takes DNA samples from 20 of their young ewes from the same drop, and the test assesses the genetic merit of their flock in terms of ASBVs.

"The Flock Profile tool is a very useful way for commercial producers to utilise genomics," Peta said.

"They may see their ASBV for yearling weight is 5. If they want to improve that, they need to buy rams within ASBV greater than 5. It gives them a clear way to use ASBVs in their selection decisions."

Commercial producers can benefit from these tools by looking at ASBVs when purchasing rams.

"We're driving genetic gain at a seedstock level faster than ever before. If a commercial producer is using ASBVs and indexes to purchase rams, they're piggybacking off that accelerated genetic progress." ■

ℹ️ ✉️ Sarita Guy **sguy@mla.com.au** ✉️ Peta Bradley **pbradley@mla.com.au**

Leading Breeder forum

Around 100 sheep producers attended the 2023 Leading Breeder Forum in Bendigo – this biannual conference, hosted by Sheep Genetics, gave an update on genetic evaluations and showcased innovations in development to achieve genetic improvement.

This year's theme was 'The role of genetics in sustainability and productivity'. Participants heard from industry experts about what traits they should be considering in their breeding objectives going forward, particularly in relation to the role genetics can play in achieving sustainability outcomes. Designing breeding programs and increasing the accuracy of genotyping in the future was also a major focus of the forum.

All sessions of the forum are available to watch online via MLA's Sheep Genetics website – visit **sheepgenetics.org.au** or scan the QR code.

SEASONAL ACTION PLAN

❗ **Plan for the sale**
- Understand the genetic merit of your flock using a Flock Profile test.
- Search the Sheep Genetics site to find the rams which will increase the genetic merit of your flock and propel you towards your breeding objective.
- Create a shortlist of rams and set a budget.

❗ **On sale day**
- Visually assess shortlisted rams.
- Once you have revised your list, bid on the rams you require and stick to your budget.

❗ Attend a BredWell FedWell workshop or contact the Sheep Genetics team at **sheepgenetics@ mla.com.au** to gain a better understanding of how to use ASBVs.

TOOLBOX

🔘 MLA genetics hub: **genetics.mla.com.au**

🔘 BredWell FedWell: **mla.com.au/bredwellfedwell**

🔘 Sheep Genetics: **sheepgenetics.org.au**

Working together
key to tackling wild dogs

Wild dogs are an elusive and adaptable adversary to livestock productivity in many parts of Australia, but thanks to the perseverance and coordinated approach of well-connected groups of producers, gains are being made.

At last count, the economic impact of wild dogs was estimated to be $89–110 million/year in lost agricultural productivity.

Greg Mifsud, the National Wild Dog Management Coordinator at the Centre for Invasive Species Solutions (CISS), suggests these losses could be even higher at today's current market values.

Wild dogs are classed as pure dingoes (mainly found in northern Australia), wild domestic dogs, and those hybridised with dingoes (in southern Australia).

MLA supports CISS and its research into economically, ecologically and socially informed wild dog management processes and co-funds wild dog management coordinators around the country.

Greater awareness and insights into how to best manage these ubiquitous pests have also been gained via MLA's Producer Demonstration Site (PDS) projects, see more on pages 13–14.

Here, Greg explains how the increasingly collaborative approach to managing wild dogs is making solid progress.

Stronger together

Greg said it's important for producers to work together when facing the issue of wild dogs.

"It's one thing to have access to all the best tools but quite another if you and your neighbour aren't joining forces to implement a strategic approach – you don't want to be chasing dogs from one property to another," he said.

"These dogs have large home ranges and travel across those areas on a regular basis. A coordinated program ensures dogs are exposed to control no matter where they happen to be, or whose property they are on, within that home range."

Integrated management programs are essential – a targeted approach could include focusing on corridors between neighbouring properties to prevent recolonisation by wild dogs from nearby farms.

Adapting to change

Greg's role at CISS centres around getting everyone on the same page.

"My job is to maintain engagement and support landholders to adopt best practice wild dog management techniques and develop management plans.

"Despite some very effective wild dog management and fencing programs, wild dogs are always in the landscape and continually pose a threat. Pest management is an adaptive approach – you need to review it all the time."

Greg recommends producers develop syndicates or wild dog management groups to collectively develop management plans and look for options to support ongoing wild dog management that fit their landscape and production setting.

"Working collectively makes sense. Form a wild dog management group or, if you're moving to a new area, ask around if there's one you can join," Greg said.

Building skills

Training is another aspect of his capacity-building work – this includes ensuring people know the best practice techniques, such as the correct way to lay baits or set traps, to achieve the best management outcomes.

Maintaining engagement and training is important to reflect staff turnover and changes in property ownership.

Best practice tools

Technology has improved producers' ability to combine and enhance their data and helps inform where to best place control measures.

CISS's WildDogScan and FeralScan apps allow producers to monitor and record wild dog sightings and share with their neighbours if they use the community function of the program. (Information can

Greg Mifsud conducts regular training and awareness-raising activities in his role as National Wild Dog Management Coordinator at the Centre for Invasive Species Solutions.
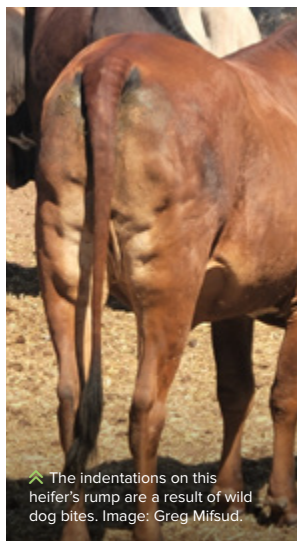
Baiting and trapping tips

- Community baiting is the most cost-effective approach to population-level control.
- Dogs will commonly move along easier access routes such as vehicle tracks or fire breaks.
- Put baits or control in areas where dogs will encounter them.
- Intensively manage foxes to effectively target wild dogs as these inquisitive scavengers can undermine baits and traps and attack newborn lambs.
- To protect working dogs, tether or tie 1080 baits (sodium monofluoroacetate)

to a post or branch where possible, so they can't be removed unless consumed.

- Canid Pest Ejectors reduce the risk of 1080 being consumed by non-target animals as the trigger mechanisms prevent other animals from setting it off. Put traps near or under cover, not in the open. Lures will get wild dogs close enough to traps and out of the way of cattle and sheep.
- Organic producers can access guidelines (scan the QR code) for compliant baiting programs.

⌃ The indentations on this heifer's rump are a result of wild dog bites. Image: Greg Mifsud.

be kept private at the user's discretion but if you're a member of a community group, the control data is automatically kept private.)

"On big cattle stations, staff see a lot of dogs and impacts while mustering – they all have smartphones, and can easily record data using the app while in the paddock.

"Sightings of wild dogs, mauled stock and where dogs have been shot or trapped can all be recorded in the app, and those records are automatically uploaded and displayed on the FeralScan webpage when they get back into service," Greg said.

He said remote cameras were also effective – especially with their ability to send a text message when they sense movement – and could be placed at areas of known wild dog activity, such as water points.

Keep watch

Understanding wild dog behaviour will help fine-tune control measures, particularly around vulnerable periods such as lambing, calving and weaning.

"Protect your assets during these times, using small amounts of targeted control at strategic locations like water points, drainage lines, isolated areas of the property where wild dogs are likely to reside, or around paddocks where calving is likely to take place," Greg said.

Tips for impact

- Optimise your risk management during calving/lambing.
- Wild dogs and foxes in the area during lambing can cause stress and mismothering.
- Protect young weaners who no longer have their mothers' protection.
- Smaller weaners are most at risk.
- Sheep require year-round vigilance.

Mental health matters

Despite the significant psychological trauma producers face from ongoing wild dog attacks, Greg is pleased to witness a change in mood among those affected.

"We're at a far better place than when I started this role in 2007. People better understand what to do and how to get support – 15 years ago there was a lot more angst than there is now," Greg said. ■

Predator research snapshot

Here's a look at two MLA Producer Demonstration Sites (PDS) which focus on wild dog management.

"**Make use of property pest management plans – they'll help give you direction and make sure you're effectively coordinating with your neighbours.**"

⌃ Land Management Officer at Fitzroy Basin Association, Kate Woolley.

Improved beef productivity through predator control

Banana region, Central Queensland

Scan this QR code to follow the project

PDS facilitator

Kate Woolley, Land Management Officer, Fitzroy Basin Association

Aim

To improve calf survival and productivity gains in beef enterprises through the delivery of best practice wild dog management.

Participants

Grassfed cattle producers

Challenges

- Wild dog predation of young and old cattle causes significant losses through condemned meat and calf and weaner losses.
- Wild dogs spread hydatid disease in cattle which affects weight gain, productivity and carcase quality.
- Wild dogs infected 20% of the project's sample size with neosporosis (a parasite causing bovine abortion, sick calves, decreased milk yields and reduced weight gains).

Key learnings and outcomes

- Training in best practice predator control programs has built participants' capacity.
- WildDogScan provides accurate details of control activities and assists in reporting.
- Canid Pest Ejectors (CPEs) have assisted participants with organic and humane status requirements.

➤ For more information on neosporosis in cattle **mla.com.au/neosporosis**
✉ Kate Woolley **kate.woolley@fba.org.au**

> **"A predator control management program is invaluable and includes a map with control sites generated from the FeralScan app, an inventory for the program, legal signage requirements and a notification list."**

⌃ Matt Mahoney, from Agridome Consultancy, runs MLA's Less predators, more lambs Producer Demonstration Site (PDS). Image: Mark Jesser.

Less predators, more lambs

North-east Victoria, near Mansfield
Scan this QR code to learn more about the project

PDS facilitator
Dr Matt Mahoney, Agronomist and Farm advisor, Agridome Consultancy

Aim
To improve lamb survival and demonstrate best practice in sheep management practices and predator control.

Participants
Autumn and spring-lambing Merino and first-cross sheep enterprises

Challenges
Wild dogs and foxes predate lambs in the first weeks of life up until lamb marking.

Key learnings and outcomes

- If a wild dog or fox baiting program starts 6–8 weeks before lambing, it appears to be effective even if neighbours aren't also baiting.
- Baiting sites need to be appropriate to the terrain and species targeted — set this out in your property predator control management program.
- FeralScan app is an integral part of the program and can be used by properties that are implementing predator control methods other than baiting such as shooting and trapping.
- The combination of best management practices and a timely predator control management program can substantially increase lamb survival and farm profitability.
- Lamb post-mortems confirmed that 18% of the lambs presented were killed by primary predation.
- Lamb survival has increased on all properties, attributed to using predator control management programs, equating to a potential extra $42,000 income (280 lambs at $150/head).
- Training in best practice predator control management, conducted by Greg Mifsud (CISS), in combination with best practice sheep management has improved lamb survival rates and farm profitability.
- FeralScan app provides accurate details of control activities, sightings and communication with other group members or farm staff.

✉ Matt Mahoney **matt@agridome.com.au**

Staying

Collecting data, working collaboratively and supporting each other are key to staying on the front foot when dealing with wild dog attacks.

This is the message from Victorian sheep and cattle producer Paul Diamond, who has seen first-hand the devastation wreaked by wild dogs on producers' livelihoods, livestock and mental health.

Paul's property, 'Pinnaroo', is one of eight host properties in MLA's 'Less predators, more lambs' Producer Demonstration Site (PDS), which is coordinated by Agridome Consultancy (see PDS snapshot on left).

The PDS aims to improve lamb survival and demonstrate best practice in sheep management and predator control in autumn and spring-lambing Merino and first-cross sheep enterprises in north-east Victoria.

"Wild dogs create a variable that's very difficult to control, so it's important to be vigilant and keep composure — although at times this can be extremely hard given the severity of the circumstances they create on-farm," Paul said.

Harsh reality

Paul recalls the trauma of a wild dog attack where, over six weeks, he lost 60 scanned-in-lamb ewes. On top of the emotional toll, his financial loss was $15,000.

It's not only wild dogs causing such heartache — Pinnaroo's location near the shores of popular holiday destination Goughs Bay means visiting pet dogs often roam the area and impinge on the livelihoods of local producers. These dogs may not be registered with the local council, making it difficult to determine their ownership.

"It takes a huge mental toll — one weekend I lost 30 lambs. I asked the ranger to go around Goughs Bay and check permits but it could have been a dog owned by people who were just visiting for the weekend," Paul said.

These days, Paul works closely with his local professional wild dog controller for advice on trapping, baiting and shooting, and feels he has access to better support and tools.

"We utilise all the tools for the most effective methods of wild dog control," Paul said.

Working together

Understanding the behaviour and location of wild dogs is key to predicting attacks

ahead of the pack

and knowing where to place control measures such as baits.

Paul said they have most of their damage in March and April, during the breeding season, as wild dogs are roaming further out of the bush.

Paul uses tools such as the FeralScan Pest Mapping and WildDogScan apps and works with his neighbours to collect data on dog sightings, attacks and control activities.

He said this collaboration is critical.

"The more data points I have – whether it's my neighbour sighting a wild dog near my property or recently trapping one – the better I can prepare my sheep or cattle pre-lambing and calving," Paul said.

New tools

Paul and his brother James have harnessed the power of technology to help producers implement a more systematic approach to everyday issues on-farm. They developed a farm safety software platform, AirAgri.

"AirAgri enhances farm safety and management and taps into the sensitive topic of mental health. I use it to conduct my day-to-day operations with the confidence that I'll be getting home to my family every evening."

An internet of things (IoT) network tracking device is incorporated into the AirAgri platform. This, along with the safety management system, gives Paul peace of mind.

The platform allows producers to manage and implement tasks across different job lists on their farm. Paul uses both AirAgri and FeralScan to log his predatory information.

"FeralScan feeds information back to government on the measures taken in different areas to control these predators, while AirAgri has task allocation so you can pinpoint areas where you want baits to be laid. You can then allocate that to different members on the platform," Paul said.

Predator Control Management Program

Another important aspect of Paul's wild dog toolkit is his Predator Control Management Program (PCMP), which he conducts from April to May. This program was devised by PDS facilitator Dr Matt Mahoney, of Agridome Consultancy.

A PCMP contains:

- everything in one place to ensure comprehensive predator control can be implemented

- property-specific details, i.e. joining and lambing dates, baiting start and end dates, and key contacts
- a property map marked with control points
- important information such as FeralScan login details
- neighbour contact details for notification
- information on number of baits required and signage requirements.

The PCMP is specific for his property and utilises thermal imaging and baiting controls for about eight weeks leading into, as well as during, lambing.

"Throughout the year it's on and off but that eight-week period is really when we hit it hard. If we're copping significant damage, which luckily we aren't this season, we'll add trapping to that list from February onwards."

Paul uses thermal imaging on his gun scope which helps give him the upper hand by removing the need for spotlights, which he has found can spook wild dogs and foxes.

Learnings so far

Since applying his PCMP, Paul has seen lamb marking rates increase by 6–10% per year.

Being involved in the PDS has given him the confidence that the overall management system on the farm is going to continually perform year-on-year.

"The PDS, along with the use of Lifetime Ewe Management and the Lambs Alive courses, have given me a far greater understanding in the management of both livestock and pastures to maximise the output of our Merino flock," Paul said. ■

LESSONS LEARNT

- ✅ Consider all options and create a suitable response to wild dogs.
- ✅ Speak with government bodies which are in place to guide and support your business.
- ✅ Stay positive and remember at the end of the day your animals rely on you to protect them.
- ✅ Be vigilant to all aspects of your business and the variables that could impact it.

ℹ️ 🎙️ AirAgri **airagri.com.au** ✉️ Paul Diamond **pauldiamond88@gmail.com**
✉️ Alana McEwan **amcewan@mla.com.au**

⌄ Sheep and cattle producer Paul Diamond believes a collaborative approach is needed to deal with wild dogs.

SNAPSHOT

PAUL DIAMOND,
'Pinnaroo', Goughs Bay, Victoria

AREA
500ha

ENTERPRISE
1,500 superfine Merino ewes, 200 stud and commercial Angus breeders

PASTURES
Improved pastures and native undulating hill country

SOIL
Grey loamy clay

RAINFALL
750mm

TOOLBOX

- 🎙️ Scan this QR code to learn more about the MLA PDS *Less predators, more lambs.*
- 🎙️ Learn more about MLA's PDS program at **mla.com.au/pds**
- 🎙️ Making More From Sheep (MMFS) – tools and training to build profitable and sustainable sheep enterprises: **makingmorefromsheep.com.au**
- 🎙️ MMFS *Sheep producers manual* (predator management modules 5 and 12)
- 🎙️ Centre for Invasive Species Solutions: **invasives.com.au**
- 🎙️ PestSmart provides best practice pest control information: **pestsmart.org.au**
- 🎙️ Order the updated glove box guide *Best-practice management of wild dogs in peri-urban environments.*

Genetics plus grazing meet main goals

Cootamundra, NSW, beef producer Chris Main relies on genetic tools and strategic grazing to meet the premium grassfed market.

When Chris returned home to his family's properties, 'Retreat' and 'Treetops', in 2016, the enterprise mainly focused on trading steers. He found results were inconsistent, so in 2018 he switched to breeding with the goal to produce cattle which perform for his environment and management system.

Grazing management

Chris has completed several holistic grazing management courses, including Grazing for Profit.

He practises time-controlled grazing, using portable electric fencing to strip graze small areas of paddocks.

Cattle are moved onto fresh grass every day and once they've grazed down a paddock, they don't come back to that paddock for nine to 12 months.

This system concentrates dung and urine on small areas which, combined with the long recovery period, ensures good pasture germination and growth response once cattle are moved off.

Genetics

Chris is working towards the entire breeding herd being bred on-property, rather than the current mix of bought and bred cattle.

His goal is to have animals of a consistent size and type, to suit his management system.

"Genetically, I'm after a medium-framed animal that does well on grass," he said.

In recognition that bulls which are physically very similar can have very different outcomes due to their different genetics, Chris uses BREEDPLAN Estimated Breeding Values (EBVs) to make selection decisions backed by data.

"I buy heifer bulls with good EBVs for low birth weights and ease of calving. Since I've been using these bulls, I haven't had to pull a calf once."

He also only selects homozygous poll bulls, as he still has a few horned Herefords in his herd.

"I also look at the rib and rump fat EBVs, which are an indicator of early maturing and fertility."

Days to calving is another important trait, because the shorter the gestation period, the more time breeders have to recover until they're in with the bulls again.

"I also like high IMF numbers – it's a good eating quality sign and, as an industry, we should be focusing on this."

This is the first year Chris has calves on the ground from cattle he's bred himself on the property.

"There's still a fair bit of variation, but as I get more heifers I've bred into the breeding herd, it'll start to become more uniform. I have a good base to work from, but there's still a few with larger frames, which I'm working to bring down," he said.

Marketing

Chris is not locked into a particular weight bracket, so watches the market and talks to his agent.

Accreditation across a range of quality programs, including Teys Grasslands, Greenham NEVER EVER and Roots Regenerative, gives flexibility.

Based on current prices, Chris aims to turn-off stock at 400–450kg. Depending what the markets are doing, he'll send cattle into these programs, to local feedlots or the Wagga Wagga saleyard if that's a better option.

Data collection

Chris believes as prices come down from the highs of recent years, collecting data is critical for commercial producers who want to become preferred suppliers.

He uses a program called Black Box Co, which collects data such as weight gain across an animal's lifespan as they move from the farm through the supply chain.

By capturing on-farm and feedlot weight gain, as well as carcase information, he can understand how the bulls he uses are performing in the market.

"I want to get to the point where I have the track record with buyers, and the data to back it up, so I'm a preferred supplier of animals to these grassfed accreditation schemes," Chris said. ∎

≪ Cootamundra grazier Chris Main. Image: Chris Sims.

ⓘ   MLA genetics hub **genetics.mla.com.au**   ▶ BREEDPLAN **breedplan.une.edu.au**   ✉ Chris Main **mainchris@hotmail.com**

Supercharge your sale day game plan

The genetics of the bulls you use will stay in your herd for many generations, so investing in new bulls requires careful planning, beginning long before sale day.

When buying a bull, it's important to check physical and structural soundness, vaccination history and BULLCHECK for fertility.

Another important component that you'll be taking home with the bull is his genetics. This is where tools such as breeding values can be used to objectively assess his genetic strengths and weaknesses, to decide if he's the right fit for your herd.

Compare sires

MLA's Project Manager – Genetics Adoption, Sarita Guy, said MLA's investment in genetic tools allows producers to compare different bulls from different studs on a national level.

"A lift in performance caused by what a bull is fed will not be passed onto his progeny, as only genetics are passed on," she said.

"The best estimate we have for genetic merit is through Estimated Breeding Values (EBVs)."

EBVs are generated using BREEDPLAN analytical software, which can separate the environmental and management influences from the genetics component, using performance data, pedigree and genotyping data.

"EBVs provide an insight into how good his genetics are," Sarita said.

Accelerate performance

Accelerating your herd's performance with better breeding values starts with understanding what you want to achieve.

"First, identify your profit drivers and breeding objectives – these are the road map for where you want to make improvements.

For example, if you're Meat Standards Australia (MSA) graded, you're being paid on eating quality, so aim for bulls with the right genetics for good eating quality.

"Once you can pinpoint what you want to achieve, identify which genetic traits align best to help you achieve them. If targeting eating quality, the EBV for intramuscular fat (IMF) will help you improve."

From there, you can look at bulls you're using currently and target a bull that can improve on performance.

"Find bulls which have better IMF EBVs than your current bulls. If you're not sure where to start, look at breed average and aim for a bull with a higher IMF EBV than this. So, if the industry average is +1.0, find a bull which has an IMF EBV higher than +1.0."

Bigger picture

Sarita cautioned against looking at traits individually.

"We know focusing on one trait can be detrimental to another. For example, if we select only for eating quality, carcase yield will decline," she said.

Producers can avoid this pitfall by using a selection index.

"A selection index is a balanced combination of all the different traits relevant to a production system. It considers the different relationships between traits and balances them out so that we come up with one number, and that's a dollar value of what we expect that bull to bring."

When it comes to the use of genetic tools, set realistic expectations and use multiple tools hand-in-hand to decide which bull is right for your herd.

"Genetics is not a silver bullet – it is only one part of the equation for good performance," Sarita said.

"Take a holistic approach – it's important to use visual assessment alongside EBVs. Good management, such as matching feed requirements with supply, are also important to maximise your genetic investments." ∎

> "First, identify your profit drivers and breeding objectives – these are the road map for where you want to make improvements."

ℹ️ ✉️ Sarita Guy **sguy@mla.com.au**

SEASONAL ACTION PLAN

Planning for the sale

❗ Identify your profit drivers, breeding objectives, relevant breeding values and selection indexes.

❗ Search the sale catalogues and online BREEDPLAN database to find the bulls with EBVs which match your desired breeding values and indexes.

❗ Shortlist the bulls which match your criteria and decide on your budget.

At the sale

❗ Visually assess your shortlisted bulls and cross off any which don't meet your assessment or are not reproductively fit.

❗ Bid on sires on your revised list and stay within your budget.

TOOLBOX

🔸 MLA's genetics hub **genetics.mla.com.au**

🔸 BredWell FedWell **mla.com.au/bredwellfedwell**

🔸 BREEDPLAN **breedplan.une.edu.au**

🔸 ABRI Extension Service

Golden touch to weather challenges

Kerran and Melanie Glover describe their mixed enterprise at Lock, SA, as a 'risk management tool' — one which has remained sustainable through seasonal variability and other challenges to productivity.

Here's a look at how they've adapted management at 'Goldmine Hill Farms' to remain productive in the Eyre Peninsula environment.

Adjusting the feedbase

Historically, the region's high frost risk has seen legumes — and profits — take a hit. In response, Kerran refocused the feedbase program to medic pastures as a lower-risk option for the business.

"Some soil types don't lend themselves to certain legumes, but medic can be grown across the board on a varying range of soil types — it's effectively doing the same work as legumes," he said.

"If we can get it to establish well, we're still getting the benefits of nitrogen, grass control and sheep feed."

Along with medic pastures, vetch has proven beneficial to the Glovers' feedbase by providing diversity and high nutritional value for finishing and growing lambs, while also complementing the cropping side of their business.

Tillage radish, as a mix with vetch, has also been promising. It adds diversity and biomass to increase stocking rates during key periods, allowing for greater rotation and rest for other paddocks.

Maintaining ground cover

Fragile soils on the Eyre Peninsula are susceptible to drift, so the Glovers place a high priority on maintaining ground cover to reduce erosion.

They use containment yards to keep sheep off paddocks and maintain their condition, and to retain ground cover over summer when sandy soils are most vulnerable to drift.

"On some of our fragile soils, if we overgraze too early, they won't recover and will be exposed to wind over the summer months," Kerran said.

"The containment yards have given us more flexibility in the way we run our livestock — now we can rotationally graze in two-week cycles and better manage pastures."

Infrastructure

The containment yards are part of a major redevelopment phase to improve productivity, optimise efficiencies and create a positive working environment.

New facilities and infrastructure include:

- a new shearing shed to accommodate summer shearing
- an office available to all staff
- an autodrafter, sheep handler and bulk handler for the yards — helping to integrate electronic identification (eID) technology.

These facilities complement the existing systems on-farm, including laneways, water leak detection units and weather stations.

"The laneways allow us flexibility to have paddocks to crop or paddocks to pasture, and it centralises the way we can move livestock and machinery," Kerran said.

⌄ Melanie and Kerran Glover (pictured with their children) prioritise family and strive to maintain a work-life balance.

SNAPSHOT

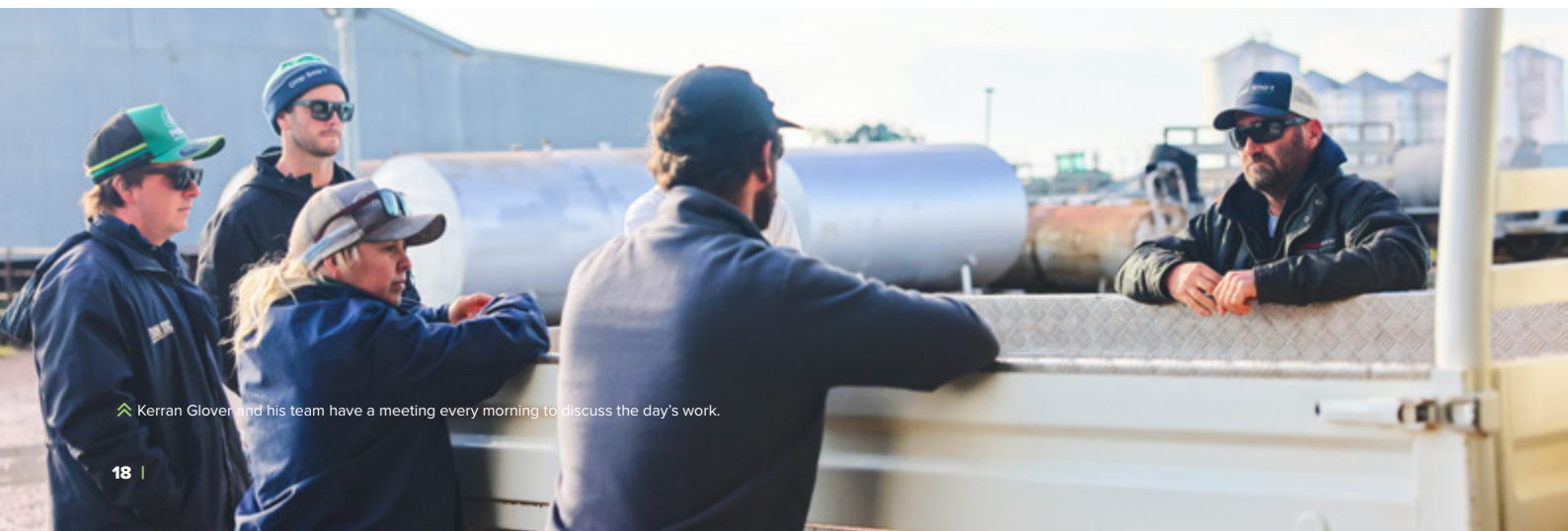**KERRAN AND MELANIE GLOVER,** Goldmine Hill Farms, Lock, SA

AREA
6,500ha

ENTERPRISE
1,500 Merino ewes and cropping

PASTURES
Regenerated medic pastures

SOIL
Sandy loams, sand over clay, non-wetting sands and shallow limestone reef

RAINFALL
350mm

⌃ Kerran Glover and his team have a meeting every morning to discuss the day's work.

"Four out of our five farms are linked through this essential network, which makes for an efficient use of labour."

It reflects a new era of livestock management.

"We're integrating containment yards, feedlot and eID technology to better manage our sheep," Kerran said. "With the new shearing shed and yard facilities, it should be a great environment for all that work in our business."

These facilities offer more than production benefits – it's part of a staff retention strategy, which Kerran and Melanie believe is the most critical part of their operation.

"We currently have four full-time employees, and the most important thing is they enjoy working here and we give them an environment that's good to be around. What we do is based around our team and everybody being a part of that team."

Feedlot

An integral part of the team is Goldmine Hill's livestock manager Johan Kreik, who oversees the feedlot system.

In the past, the Glovers had to sell lambs to restockers when there was insufficient feed to carry them through – but Johan brought a new perspective to the business.

"He has a background in animal nutrition, feedlotting and auto feeders, so he's been able to help us implement these systems to finish our lambs ourselves," Kerran said.

The autofeeders, in particular, have earned their place at Goldmine Hill, through:

- improved time management
- easy calculation of profit-over-weight gain with monitored pellet feeding
- easy set-up with manual stopping to prevent overfeeding.

One auto feeder supports 1,000 lambs, providing a nutritional regime of pellets with calculated minerals, vitamins and food protein.

Lambs enter the feedlot at 40kg and come out at 60kg, with a target weight gain of 300–400g/day for approximately 50 days.

"If we're trading stock through the feedlot, we look to source the lambs locally to reduce any biosecurity risks," Johan said.

Genetics

The Glovers harness a range of technologies and strategies in their polled Merino flock, including Australian Sheep Breeding Values (ASBV) and eID.

They monitor and select for traits such as:

- eye muscle depth
- post weaning weight
- clean fleece weight
- staple length

- breach wrinkle
- dag score.

"We have low-maintenance sheep with six-month shearing, so we felt like we could easily transition to be mulesing-free as the industry moved in that direction," Kerran said.

The adoption of eID was also an easy decision, as a tool to better manage the traits of their flock.

Joining takes place in November (in the containment yards), and ewes are scanned in February to identify wet/dry and single/multiple – this year is the third season the Glovers have added litter size to scanning.

Lambing occurs in paddocks, with multiple-bearing ewes receiving broader access to nutrition (extra lick feeders).

During containment, a combination of legume-based hay, cereal hay and straw complete the flock's diet, to maintain condition.

Since making these changes over the past three seasons, lambing percentage has increased by 15%.

"Every time we make changes to our ewe management we've seen a lift in percentages – it's largely achieved by better access to nutrition and managing condition through the lambing period," Kerran said.

Working together

Melanie runs the administration, book-keeping and finance side of the business. She uses a range of online systems, including the myMLA platform to access information on Livestock Production Assurance (LPA), electronic National Vendor Declarations (eNVD) and Meat Standards Australia (MSA).

"Over the years we've been using the eNVDs, I've found them really easy to use. There are resources available online so we can maintain our accreditations, but also all updates and info that might be relevant to what we're doing here with our livestock," Melanie said.

Aside from production and business, Kerran and Melanie love working together as a family.

"I'm pretty fortunate with the lifestyle we have – we don't spend each and every day together working but when it comes hand-in-hand with family, we seem to get things sorted when they need to be," Melanie said.

While Kerran said farm succession isn't a current priority, he acknowledged the challenge it can be – and that there isn't a right or wrong direction, as long as producers are aware and can quietly plan ahead.

"I use independent consultants for advice on agronomy, marketing and human resources, and we work very closely with our accountant and bank manager. I found this of great

Tillage radish has added diversity and biomass to many of the Glovers' pastures.

The Glovers hosted a virtual farm tour as part of an MLA MeatUp event – scan this QR code to watch the video on YouTube.

benefit to our business in the past 10 years and, because of that, we're quick to adopt new ideas if I can see the value that will add to our business.

"I'm very proud of what we've been able to achieve in the past 10 years and I'm looking forward to what the future holds." ∎

Kerran and Melanie Glover **gusandmel@icloud.com**   Andrew Morelli **amorelli@mla.com.au**

Cashing in on calf survival

MLA-supported research is tackling the significant problem facing northern Australian beef businesses of cow and calf mortality, due to poor nutrition and environmental stress during pregnancy and calving.

The Calf Alive project with the University of Queensland is in response to northern calf loss figures, which can be 11–12%, and up to 20% on some properties.

Some of these losses occur during pregnancy, but most occur after calving – usually in the first week of life.

Calf Alive lead researcher, Associate Professor Luis Prada e Silva, and his team are working with 11 Queensland and NT beef businesses to identify management methods which have potential to overcome the effects of poor nutrition and weather extremes.

"Before Calf Alive, we demonstrated that improved cow nutrition at the end of pregnancy increased milk production, which resulted in increased colostrum delivery to calves and an increased transfer of passive immunity – so calves were healthier and grew faster," Luis said.

"We also saw some animals performed well even when nutrition was poor – this was related to the way they metabolised nitrogen.

"In Calf Alive, in addition to nutritional intervention, we're analysing nitrogen isotopes on the tail hair of the animal and ranking the animals on their efficiency in handling nitrogen.

"We hope this will help us predict which animals will perform over the next three years."

Late pregnancy

Luis said problems can occur when cows are in their final trimester of pregnancy during the end of the dry season. Little nutrition is available at this time of year, when cows need it the most.

"They're preparing for lactation and the foetus is growing fast – this is happening before the rain starts. They are losing body weight during that time."

The nutritional intervention in Calf Alive involves a lick, with an intake of between 0.6–1kg/head/day. The lick is offered for six to eight weeks, depending on the spread of the expected calving dates for the group.

Insights so far

Calf Alive has set a goal of improving survival, with 5% more calves and 1% more cows alive at weaning.

Once results are in, the project team will do a comprehensive economic analysis to identify the cost–benefit of interventions.

The first year of data collection on calf survival is nearly complete, but the

variability across properties and years means the team will need several years of data to be able to quantify the impact of nutritional intervention.

However, Luis said there were already promising signs for the industry.

"At the end of the day, producers want to know how much live weight they're selling every year," he said.

"What we're demonstrating is that if you spend $30 or $40 per cow, you can recover this on body weight alone, even before we take calf mortality into account. These cows are putting on 15–30kg more carcase weight, which is already enough to pay for the cost of supplements.

"Calf Alive is providing the supplements for the treatment group, but beyond the trial participants, producers are starting to understand they have a problem that improved nutrition can help with. In some places, they are already adopting better nutrition for the whole herd." ■

SEASONAL ACTION PLAN

❗ Ensure pregnant cows are maintained in a paddock with enough water points which are relatively easy to access, and provide supplements during the second part of the dry season.

❗ Longer term, set aside a paddock for pregnant cows and manage it for better quantity and quality of forage. This may involve spelling a paddock during the wet season and saving it for cows during the dry season.

❗ Don't regard fertility as the main index for reproduction. If a breeder is pregnant every year, she may still lose the calf. Nutrition may be insufficient to produce enough colostrum for calf survival.

Luis Prada e Silva and Karen Eyre from the Calf Alive project team with one of the Calf Alive management methods (installation of weather stations).

TOOLBOX

🌿 Calf Alive:
futurebeef.com.au/calf-alive

🌿 MLA grazing management tools:
mla.com.au/grazing

🌿 Northern Breeding Business:
mla.com.au/nb2

ℹ️ ✉️ Luis Prada e Silva **l.pradaesilva@uq.edu.au** ✉️ Tony Parker **tparker@mla.com.au**

Cows and calves at 'Rocklands'.

Smoothing the rocky road for more calves

As manager of Paraway Pastoral Company's largest cattle breeding operation, Matt Barrett keeps a close eye on the reproductive performance of the herd at 'Rocklands'.

The extensive property – which spans 6,600km² on the Queensland/NT border – is home to a 46,000 head Brahman-based breeder herd. Santa Gertrudis and Angus genetics have been added since 2017, with the long-term aim to build a Santa Gertrudis/Angus-cross herd.

Rocklands supplies Paraway's channel country properties with steers, so genetic investment in quality bulls focuses on increasing turn-off weights and reproduction rates.

Reproductive challenges

Like most northern beef business managers, Matt faces the challenge of a high number of losses between pregnancy testing and weaning.

"Calf survivability is the biggest gain we can make at this point in time," Matt said.

"There's a massive percentage that's just wasted and if we can pick that up, it will make a huge difference to most of the businesses in the north."

He said there's no single factor which they've been able to identify as causing this percentage of losses.

"It's everything from the breeder's mothering ability, the nutrition in the grass, the quality of the grass, the distance to waters, a bit of dystocia and a bit of predation," he said.

Matt was attracted to the MLA/University of Queensland (UQ) Calf Alive project (see story opposite) for its potential to address the industry-wide issue of calf survivability by ensuring cows have better nutrition to produce better milk so calves get on track to survive.

Research in action

For the Calf Alive research at Rocklands, pregnant cows were fed a high-energy, high-protein meal, four weeks pre-calving and two weeks post-calving.

Matt used two paddocks and fed breeders daily – while this intensity of intervention wouldn't be possible across 30,000 breeders, for the purposes of the project it showed what's feasible.

While the first year numbers are still being crunched, Matt has already been able to pinpoint a difference in the condition of the cows.

"In terms of the number of calves, it would be very hard to put a statistical difference on them, but the condition of the cows was probably half a body condition score ahead."

He estimated cattle in the project were around 30kg in front of cows which weren't fed the supplement, and the condition of their calves or weaners was around 10kg better than calves not in the trial.

Promising results

Matt said these early signs are promising.

"A 1% improvement on our calving rate – just on weaners alone – is probably worth $200,000, which is significant, but there are added benefits as well.

"This way, we're supplementing cows for the right reason, and supplementing fewer cows that aren't bringing a calf to the yard."

Looking ahead, if the results from Calf Alive are positive, Matt said they will look at incorporating a nutrition program into their management longer term.

"We'd have to look at how we feed them, as it's pretty intensive at the moment. We're feeding cattle daily and we just can't do that across the whole herd. We'd have to develop a program where we feed them every week or feed them once at the start of that six-week period – or find some other way to make our labour a bit more efficient.

"It will come down to dollars. It's feasible, but it would have to be cost-positive for us," he said.

The Calf Alive project is just one of a suite of improvements Matt oversees at Rocklands.

He was also involved in the MLA Paddock Power project, which recently finished.

✉ Matthew Barrett **matthew.barrett@paraway.com.au**

SNAPSHOT

MATT BARRETT (MANAGER),
'Rocklands', Paraway Pastoral Company, Camooweal, Queensland/NT

AREA
660,000ha

ENTERPRISE
Breeding: 46,000 head Brahman-based herd with Santa Gertrudis and Angus genetics added since 2017

PASTURES
Barkly country: 85% Mitchell grass species with Flinders grass, annuals and spinifex

SOIL
85% black soil, remainder red soils and sandy with some rock

RAINFALL
425mm

The three-year project, led by UQ's Kieren McCosker, looked at productivity increases from paddock development, such as fencing and improved water access.

Rocklands' watering points have increased, reducing grazing circles. All cattle now graze within 3km from water – down from the previous 6km, 8km or 10km.

Individual mobs of cattle have also been reduced from 2,000–3,000 head/mob to 800–1,000, allowing Matt to have more control over the feedbase. It's also minimised issues such as mismothering and over-grazing from larger mobs. ◼

TOOLBOX

⬤ Calf Alive:
futurebeef.com.au/calf-alive

⬤ MLA grazing management tools:
mla.com.au/grazing

⬤ EDGE workshops:
mla.com.au/edgenetwork

Is your bushfire preparation and recovery plan ready?

In response to the Black Summer bushfires of 2019–20, researchers have released a bushfire manual for livestock producers, supported by MLA, in preparation for this year's anticipated El Niño conditions.

Senior Lecturer in Veterinary Epidemiology at the University of Melbourne, Dr Caitlin Pfeiffer, co-authored the manual.

She said bushfires will be a growing threat to rural livestock production over the coming years in Australia as fire intensity, frequency and size are all predicted to increase.

"Given the high rainfall in recent years, bushfire preparation may not be at the forefront of producers' minds," Caitlin said.

"However, with the predicted approach of El Niño, producers could see their excess vegetation very quickly turn into fire fuel."

Using the manual

Ausvet Executive Director and veterinary epidemiologist Dr Brendan Cowled, who co-authored the manual with Caitlin, said producers can use the resource and its preparation plan template to prepare for fire on their farm and recover if it occurs.

"It is a step-by-step approach to planning for fire, both in the medium term and just before a fire," Brendan said.

"Whether or not you've experienced fire before, reading the manual and developing a strong action plan based off its advice is going to be essential to deal with a fire and then ensure good recovery in the aftermath."

Preparation

Some of the steps covered in the manual include:

Insurance

Make sure your insurance is up to date – once a fire gets close it is too late to adjust it.

Vegetation management

According to Caitlin, recent rains have led to a risk of increased fuel loads, not only in terms of pastoral land, but adjoining forest and woodland.

"Grazing land management is a big part of managing this, as well as staying on top of woody weed infestation and scrub," Caitlin said.

"Producers should start thinking about their current paddock rotation, because a well-grazed pasture which is short and moderately green is a lot less prone to burning than a pasture which is long and dry.

"Using herbicides, slashing or controlled burning (with approval) to keep on top of your other potential fire fuels is also an essential part of keeping your property safe – this will help to further reduce fire severity if a bushfire arrives."

She said producers should also look to control vegetation around valuable infrastructure such as sheds and yards.

Livestock safety plan

An ideal refuge area for livestock includes:

- easy access to water
- a feed supply
- secure surrounding steel fencing
- minimal pasture and vegetation so there's not much to burn.

"An area away from rising slopes with minimal dry vegetation is ideal – whether it's yards, grazed-out laneways or paddocks, paddocks with green fodder crops or irrigated paddocks," Caitlin said.

She advised producers to install underground plumbing, if possible, to prevent water supply being cut off due to melted poly pipes.

Emergency feed

"An emergency feed supply is also an important factor as a fire may damage or destroy some or all of your pasture and/or stored feed," Caitlin said.

"Calculate how much feed you would need to feed all your livestock for a week after fire if no pasture was available (an emergency feed budget) and if able to store it securely, have this kind of feed on hand before the fire season.

"If you can't store it, make a plan ahead of time for where you could get enough feed quickly."

Prepare your home

Brendan said preparing your home for fires gives you somewhere safe if you are stuck on the farm during a bushfire.

Preparation includes:

- mowing lawns and surrounding areas
- emptying gutters and checking gutter plugs work
- removing vegetation and flammable materials from around the house
- making sure hoses and firefighting units are available, in working order and connected
- if you have a rooftop sprinkler system – checking it is working.

Stay informed

Important resources to stay informed of any local fire warnings include:

- fire warning app from your local firefighting or emergency authority
- Bureau of Meteorology fire weather warnings.

> "Whether or not you've experienced fire before, reading the manual and developing a strong action plan based off its advice is going to be essential to deal with a fire and then ensure good recovery in the aftermath."

"Download the fire warning app from your state or territory fire or emergency authority onto your phone and set the appropriate alerts, such as a warning zone close to your farm," Brendan said.

"Your app will also have information about total fire bans and fire danger ratings in your region which will help you know when to move your livestock to a refuge area and when to get excess people off the farm or even leave yourself."

Recovery

In the aftermath of a bushfire, your individual safety should be addressed before aiding others, checking livestock, or beginning clean-up and repairs.

Ensuring your safety includes:

- looking out for compromised trees that could fall on you
- watching for unexpected holes in the ground due to burnt tree roots
- making sure you are wearing correct fire safety attire
- clearing access roads to your property after the fire so you can leave in any further emergencies.

"Once you're confident you're safe, the next vital step is locating your animals and identifying the conditions they are in," Caitlin said.

"If you come across injured animals, contact a local government or private veterinarian who can, in an ideal situation, come to you.

"They will aid you in determining care and what animals need to be destroyed for animal welfare reasons."

Brendan said throughout their research on the aftermath of the Black Summer fires, he found many producers felt rushed to destroy animals they felt were in pain.

"Often they do have to be destroyed, but don't rush into it. It's really important to get in touch with a vet because they will have the skills to assess the injuries and see whether they can recover, with the aid of pain relief and other treatment.

"Investing in saving your cattle will also be a lot cheaper than repurchasing – especially during a time of financial strain when your infrastructure and pastures need rehabilitating."

Help is at hand

Caitlin said the next most important step in the recovery process is asking for help.

"People want to help, and very rarely is help a limited resource – even if you feel like someone needs it more than you, there are usually enough volunteers to go around," Caitlin said.

"If you need trees cleared from the road – pay a local tree company or contact your council, and if you need help rebuilding your fences – talk to your neighbours and volunteers like BlazeAid.

"Fire recovery is a lot of work and creates a lot of paperwork, but you don't have to do it on your own." ■

⌄ In most cases, severe bushfire conditions are influenced by hot, dry winds blowing from central Australia. The dry summer months are the danger time for southern Australia. Adapted from Bureau of Meterology website.

⌃ MLA's *Bushfire preparation and recovery: A manual for livestock producers* is a vital guide for preparing for the southern summer fire season.

SEASONAL ACTION PLAN

❗ Manage vegetation and grazing to minimise fire risk.

❗ Have a bushfire safety plan for your livestock.

❗ Ensure safety gear, hoses and fire-repellent tools are in good order and accessible.

❗ Download your local fire safety app and turn on notifications to stay informed.

TOOLBOX

◉ Visit MLA's new bushfire hub at **mla.com.au/bushfire**

◉ Scan this QR code to read MLA's *Bushfire preparation and recovery: A manual for livestock producers*.

◉ Check the Bureau of Meteorology's fire weather services page each afternoon during fire season: **bom.gov.au** or scan this QR code.

Fire danger seasons

- Winter and spring
- Spring
- Spring and summer
- Summer
- Summer and autumn

Caitlin Pfeiffer **caitlin.pfeiffer@unimelb.edu.au**   Brendan Cowled **brendan@ausvet.com.au**   Sharon Dundon **sdundon@mla.com.au**

Fire prep begins early

With the effects of devastating bushfires in 2019–20 still being felt at his southern NSW enterprise, sheep and cattle producer Michael Shannon is taking steps to avoid future fires.

While Michael was fortunate not to lose any of his sheep or cattle on his Cathcart property, three years after the Black Summer bushfires, he's still mending fences.

"A bushfire preparation plan is so essential to recovery," he said.

"We had warning the fire was coming and we still got burnt, so I don't like to think how much worse it could have been if we hadn't been prepared."

Fire preparation

Michael's on-farm preparation plan when the 2019–20 bushfire was heading towards his property consisted of what he considered most important: water.

"Things were dry, and it was really windy – it was the perfect culmination of ingredients to create a hell of a wildfire and we hadn't taken the opportunity to protect our land with back-burning," Michael said.

"Despite the fact we've always been considered a high fire risk zone, we've never been burned before so a strong bushfire plan was never a part of our farming practice.

"In a last-minute attempt to protect ourselves from the oncoming fire, we loaded large water tanks and cleaned out chemical pods on the back of our utes.

"We joined them all together, filled them with water and attached a cheap pump at the end to ensure it was easily accessible – it's what saved my livestock."

Michael then hit the phones, requesting backup on-farm to help defend his livestock and land.

"I was fortunate to have lots of friends and family around me who I was able to call on to help if things got too hard for me to control on my own – which ended up being our saving grace.

"It's incredible how important it was in that time to have all that gear and help there because the Rural Fire Service can't be everywhere at once and during the heat of it all."

Fire-ready infrastructure

Michael said good bushfire preparation coincides with fire-ready infrastructure.

"The biggest thing I felt would have made a difference to our recovery was better fencing – not just steel posting, but wider gates for tree clearing machinery and large fire water trucks to get through," Michael said.

"Our gates were approximately 3m wide but they needed to be a minimum of 5m with the size of machinery we had coming through to douse the fires and clear trees – we ended up losing a lot of infrastructure due to access limitations."

In addition to wider gates and steel fencing, Michael recommends producers prepare a map of access points, so attending services don't have to cut fences to access your property.

As well as good infrastructure, Michael has added the following activities to his preparation plan for the upcoming bushfire season:

- burning off dry areas when the weather permits
- monitoring pastures to ensure grass remains green and short
- drawing up maps of water access points
- ensuring hoses are where they belong at all times
- ensuring pumps, water tanks and pipes are in good condition and working order
- stocking up personal protective equipment kits (masks, goggles and fireproof gloves)
- planting trees which are at a lower risk of burning (such as oak trees) to ensure livestock have shelter available post-fire.

"Having not only a plan, but a plan that's been effectively organised and already in place, is key to protecting your property during a bushfire," Michael said.

Michael Shannon and his family.

SNAPSHOT

MICHAEL SHANNON,
Lowanna Properties, Cathcart, NSW

AREA
1,400ha

ENTERPRISE
Cattle (800 breeders) and sheep (1,000 ewes)

PASTURES
Sub-clover and white clover base with chicory, plantain, soft leaf fescue and phalaris, some annual fodder cropping

SOIL
Black vertosol, red basalt and some sandy loam

RAINFALL
800mm

"Those little jobs only take minutes to do but are so effective in the long term – especially in terms of recovering.

"It is so important for us producers to remember that good bushfire preparation doesn't just benefit ourselves, it benefits our neighbours and community who are likely to be affected as well."

> **"Because of our experience during the Black Summer event, we now aim to be bushfire ready year-round."**

Michael Shannon **michael@lowanna.com.au**   Sharon Dundon **sdundon@mla.com.au**

Data delivers for goat supply chain

The Australian goatmeat industry's access to reliable data and its capacity to forecast population and supply changes has been significantly improved thanks to a recently completed project.

When the MLA levy-funded 'Goat industry data collation and tracking' project, led by the NSW Department of Primary Industries (NSW DPI), began in 2016, the goatmeat industry had insufficient information to project supply and set production targets. This limited the industry's ability to make informed decisions and undertake strategic planning.

The entire goatmeat supply chain in Australia required information for decision making. Basic information such as population estimates and the numbers of goats supplied from each state and region were historically unavailable to industry.

However, project leader Trudie Atkinson, Technical Specialist Grazing Systems with NSW DPI, said the project team has now established proven systems which will continue to benefit the industry.

"A critical requirement for a viable, long-term goat industry is accurate and reliable supply, population and processing data," Trudie said.

"The project collated data from existing sources, developed forecasting and modelling, and integrated industry intelligence.

"From the outset, the project has engaged the industry – building capacity and confidence to use the outputs for decision making and foresee supply issues."

Benefits to industry

Outcomes from the project include:

- improved accuracy in the reporting of goats supplied for processing from each region in Australia
- refined supply and population modelling
- establishment of the National Goatmeat Supply Forecasting Committee.

The committee consists of six representatives from various supply chain sectors and meets annually. NSW DPI and other stakeholders provide data and modelling to inform the committee's decisions.

Trudie said the processes which support the committee have significantly increased the industry's capacity to predict and understand supply and population trends, enhancing the goatmeat sector's strategic planning. ■

⊙ Scan this QR code to read regular updates on production, supply, processing and market trends from DPI's Goat industry data collection and tracking project.

ⓘ Trudie Atkinson **trudie.atkinson@dpi.nsw.gov.au**
Melanie Smith **msmith@mla.com.au**

Three goat resources

Stay informed about what's happening in the goatmeat industry with these new resources.

1 MLA's goats hub

MLA has developed a central hub for goat resources. Producers and other goat industry stakeholders can use the hub to:

- subscribe to the *Goats on the move* quarterly e-newsletter
- access the latest goatmeat industry market information
- download modules from the *Going into Goats: Profitable producers' best practice guide*
- watch videos and webinars
- sign up for workshops and training
- read producer case studies and project updates
- access tools and resources.

⊙ Learn more at **mla.com.au/goats-hub**

2 GICA strategic plan

The Goat Industry Council of Australia has released its *Strategic plan 2023–2027*. The plan is underpinned by six pillars to support the industry in delivering on its vision and strategic direction.

⊙ Read the strategic plan at **goatindustrycouncil.com.au/GICA-Strategic-Plan-2023**

3 Global snapshot

MLA's annual global snapshot for goatmeat has been released. It shows that in a global context, although Australia has a small flock, it's the largest goatmeat exporter. Key points from the snapshot include:

- South Korea is the second-largest export destination for Australian goatmeat for a second consecutive year.
- The US continues to be Australia's largest single export market, but Canada is also a growing market.
- Australian goatmeat exports to China surged from January to April 2023, positioning it as the second-largest Australian export market after the US for this period. ■

⊙ Scan this QR code to read the full global snapshot for goatmeat.

Sheep for the future

The south-west of WA is becoming drier and hotter — projections indicate the trend will continue, presenting challenges for pasture and animal production.

FutureSheep is a three-year project helping the livestock industry in WA's low and medium rainfall zones adapt to this changing climate. The project – part of the SheepLinks program – is jointly funded by MLA and the WA Department of Primary Industries and Regional Development (DPIRD).

It aims to protect the profitability of WA sheep production and the supply of sheep in the face of increasing climate variability, and the demand to mitigate greenhouse gas emissions from the sector.

Project lead, DPIRD Senior Research Scientist Dr Kevin Foster, said FutureSheep has been designed to complement MLA's existing NEXUS program by adding WA's Mediterranean farming systems to its suite of analyses. It brings a strong emphasis on adapting to a changing climate that will inform future industry investment, build knowledge and eventually lead to practice change.

Production impacts

"WA mixed farm systems are predominantly based on annual pasture species which are in rotation with crops. There's little establishment of permanent pastures or forages unless it is on marginal or non-arable cropping land," Kevin said.

"The project is focusing on three key sheep-producing regions in WA – Kojonup, Wagin and Merredin – to understand how a changing climate could affect sheep production and identify ways for farmers to adapt.

"We'll also undertake a series of targeted case studies, looking at producers who have already adapted their pasture or livestock systems to meet the current climate challenges, especially in the lower rainfall zones. These adaptations often include changes to the feedbase, management or enterprise mix."

The SheepLinks team, from left: Janet Conte, Imma Farre Codina, Kevin Foster, Meredith Guthrie, Sud Kharel and Paul Sanford.

Other factors

FutureSheep also considers the impact of climate change on wheat yields by using computer models to simulate the impact of future climate. The next phase of the project will include canola and lupins, and investigate the effects of events such as consecutive dry years. There's also the need to consider additional factors in future analysis, such as water supply for livestock and heat stress on plants and livestock.

The project will also evaluate how sheepmeat supply chains from farm to the processing entry point may be impacted by future changes. Discussions are underway with red meat processors on options, such as different turn-off dates for lambs, which could be adaptations to the future climate.

FutureSheep has a multidisciplinary team of biophysical and economic modellers, plant physiologists, a pasture agronomist, climate specialist and social scientists. They're guided by a regional reference group of producers and industry consultants whose role it will be to ground truth the farming systems and adaptation options.

It's still too early to advise the industry on where best to invest resources to ensure it's prepared for a hotter and drier future.

"We're using several computer models, but we are not yet at the stage of providing advice. We want feedback from our reference group, as well as those producers we've identified who are already making changes on the ground to prepare for a drier climate," Kevin said.

The FutureSheep project finishes in April next year, at which point Kevin said it will highlight the opportunity for continuing research into adaptation.

"Future work will need to explore what on-farm adaptations will ensure producers can have a sustainable sheep industry going forward," he said. ∎

TOOLBOX

- MLA sheep resources: **mla.com.au/sheep**
- Sheeplinks: **agric.wa.gov.au/sheeplinks**
- FutureSheep: **agric.wa.gov.au/futuresheep**

Dr Kevin Foster **kevin.foster@dpird.wa.gov.au**   Melanie Smith **msmith@mla.com.au**

Future climates no stretch
with resilient strategies

Emily Stretch describes her childhood self as 'the kid who would fly off the school bus straight into the shearing shed'. So it is no surprise she's now helping run the fourth-generation family farm.

The Stretch family run a mixed farming operation at Mobrup, south of Kojonup in WA's south-west. In addition to cropping, they run a fully non-mulesed flock of 10,000–16,000 Merinos, 5,000 of which are breeding ewes.

Emily cites climate variability as her greatest challenge as a producer.

"Season to season, things are different compared to the patterns my granddad saw," she said.

"Rainfall has always been variable, but it is more volatile now. We might have a massive dump of rain come through in March, but then this year, May was dry, which is very unusual for this region. We're also seeing higher temperatures during summer."

When Dr Kevin Foster and the FutureSheep team approached Emily to be involved in the SheepLinks project (see story opposite), she jumped at the chance.

"They were looking for people in the Kojonup area, and Kevin has one of those brains that I want to be able to dive into and absorb as much of his knowledge as I possibly can."

Future climates

Emily is supplying the property's historical rainfall data. This will be fed into models built by the SheepLinks team, to predict what the region's climate might look like in 2030 and 2050, depending on different levels of greenhouse gas emissions.

"I learned from the modelling that we would have higher temperatures over summer, which may impact the fertility of rams and ewes, because we join in February."

Emily said brutal winters over the past couple of years have also impacted their lambing percentages.

On-farm action

To mitigate the impact of these extremes, Emily is implementing a program of improvements.

Her end goal is to have shade and shelter points in every paddock to:

- reduce lamb losses during the cold driving rains in winter
- provide cooling shade during summer.

"I'd like those to be a combination of forage shrubs and shade trees, which will help mitigate our autumn feed gap," she said.

"As we've been going through this with Kevin's group, I've realised it's a no-brainer, because it has so many aspects which help farming regardless of whether it's hotter or colder."

Other adaptations she is implementing include reducing their reliance on monocultures in their pastures so that, irrespective of rain and temperature, one or more species will be thriving.

Longer term, Emily plans to renovate pastures and redesign paddocks for better utilisation, creating alleyways of forage and shelter to protect stock from any given point on the compass.

The SheepLinks modelling also flagged increasing rainfall variability, so Emily is targeting improvements to their water system to reduce reliance on dams.

According to Emily, while her family's approach to farming hasn't changed very much over the years, advances in knowledge available to them – such as from SheepLinks – have allowed them to be more productive.

"We've always been a family which values how this land is looked after," she said. "The mechanisation, the technology, the genetics and the farming techniques have allowed us to make leaps and bounds in our production system, without compromising how this land functions."

WA sheep producer Emily Stretch.

SNAPSHOT

EMILY STRETCH,
Mobrup, WA

AREA
3,200ha

ENTERPRISE
Sheep (10,000–16,000 Merinos) and winter cropping

PASTURES
Clover and ryegrass

SOIL
Range from non-wetting Jarrah forest gravels to deep grey sands to clay-loam mixes

RAINFALL
550mm

> "I learned from the modelling that we would have higher temperatures over summer, which may impact the fertility of rams and ewes, because we join in February."

The Stretch family runs a fully non-mulesed Merino flock, south of Kojonup, WA.

≫ Breeders at 'Isis Downs Station'.
Image: CPC.

Consolidated approach to scoring sustainability goals

CONSOLIDATED PASTORAL COMPANY (CPC), NT, Queensland, WA and Indonesia

AREA
3.2 million hectares across nine properties

ENTERPRISE
300,000 Brahman, Brangus, Angus and Wagyu cattle and cropping

PASTURES
Native and improved

SOIL
Variable

RAINFALL
400–1,000mm

Consolidated Pastoral Company (CPC) is well along its carbon journey, with its cluster of nine Australian cattle properties and two Indonesian feedlots the beneficiaries of an innovative approach to sustainable business development.

Increased productivity, improved feed conversion, earlier weaning, increased survival and improved ground cover are just some of the benefits.

CPC has been involved in the Clean Energy Regulator's (CER) 'Beef cattle herd management method' (BCHM) project for five years. To date, it has yielded 197,182 Australian carbon credit units (ACCUs) for its Australian-based properties.

The BCHM issues ACCUs for avoided emissions, primarily methane, through herd efficiency.

CPC's Chief Executive Officer and Director, Troy Setter, said being involved in the methodology has been a positive for CPC's people, the environment, the 300,000 cattle involved in the project, and the company's bottom line.

"We've got nearly 200 staff in Australia, plus 600 staff and 12,500 families who rely on our business in Indonesia. We have a huge responsibility to those team members and the supply chain families to be a sustainable business, not just economically but also socially and environmentally," Troy said.

Getting started

CPC's first step was to establish the required baseline measurement of emissions per kilogram of beef produced.

The baseline calculates the 'business as usual' herd emissions prior to the project starting. Under the BCHM method, a baseline is established from the most recent three years of historical herd data out of the past seven years — where herd-level liveweight gain was positive. Poorer years, where herd-level liveweight declines over the season, cannot be used to set the baseline.

Data collected was specific to each CPC property and included:

- liveweights
- liveweight gains
- stock movements.

Plans were then made to implement a suite of activities to reduce emissions and boost productivity.

Steps to success

Reducing emissions has involved a range of adaptations to CPC's management activities. The company selects bulls and cows with superior genetics. This has introduced hybrid vigour, better fertility and more efficient feed conversion into its herds.

"We're also doing artificial breeding with both

▽ Troy Setter, Chief Executive Officer and Director of CPC, at 'Isis Downs Station'.

artificial insemination and IVF to get the best genetics globally to increase our productivity," Troy said.
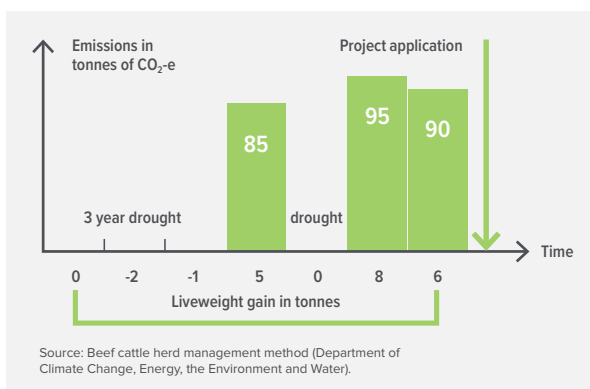
Impressive results have also been seen from a dramatic increase in strategic supplementation of phosphorus and nitrogen over the past decade.

"We've reduced mortality and sped up the age of turn-off in our herd. Since 2017, through a combination of management, nutrition and genetics, we've increased kg/ha of beef by 74%, increased branding rates by 25% and reduced the age of turn-off by 50%. They're half as old as what they were at the same turn-off weights for the same markets," Troy said.

Weaning earlier has helped cows get back in calf more quickly, reduced mortality and set up calves for improved performance in paddocks and feedlots.

"We're focusing heavily on rumen development by weaning at lighter weights

Figure 1: An example of a baseline measurement where years affected by drought are not included in the calculation

Source: Beef cattle herd management method (Department of Climate Change, Energy, the Environment and Water).

and then supplementary feeding the calves earlier," Troy said.

CPC has further reduced emissions by adding more watering points. This has opened up access to pasture and reduced distances cattle walk. On top of this, new fence lines to split paddocks have enabled better herd segregation and paddock security.

A good match

The BCHM aligns closely with CPC's overall business management goals to be as productive and sustainable as possible.

"The methodology certainly makes it worth our while to achieve these goals – it's a good economic reward," Troy said.

Troy sees an opportunity for the methodology to further reward producers who maintain and even improve ground cover, particularly those properties in northern and central Australia.

"CPC is committed to sustainable grazing as it's the right thing for the environment and the business," Troy said.

Points to consider

Currently, the BCHM is well set up for larger operations with herd numbers great enough to deliver a solid return on investment. CPC produces between 0.2–0.4 ACCUs/head.

The potential for alternate revenue is an indirect benefit (based on spot pricing), in addition to direct performance benefits of BCHM activities.

"There are some challenges involved with data collection and scale to make it worthwhile. I hope for the future, the scale issues can be addressed for smaller producers and smaller properties so they can be involved," Troy said.

Troy is happy with the methodology's capacity to handle seasonal fluctuations and adverse events such as droughts, floods and fires.

Unlike most soil and vegetation methods, BCHM activities do not need to be maintained for multi-year periods (i.e. have 'permanence') to generate carbon credits. For a project owner, this means credits are awarded in years when emissions reductions are achieved, but there is no penalty or credit clawback in years where emissions have not been reduced.

BCHM contracts are short-term with a maximum length of seven years compared with lengthier 25–100-year obligations on land title and project owners for soil and vegetation projects. ■

Beef cattle herd management method (BCHM) 101

What is it?

An emissions abatement method under the Emissions Reduction Fund (ERF) which issues carbon credits for activities that reduce cattle emissions per kilogram of liveweight produced.

Benefits for eligible producers

- It's a win:win, rewarding grassfed beef cattle enterprises for management activities which reduce emissions intensity of beef cattle, i.e. activities which result in more efficient production (earlier turn-off, faster weight gains, higher reproductive rates).
- Producers and enterprises that don't wish to undertake a formal ERF project can still benefit from production benefits, and therefore financial gains, of managing for herd efficiency.

What is required?

- To consider BCHM, you'll need a minimum of three years' herd data to establish your herd emissions baseline, including:
  › separate records for each herd involved (i.e. property, numbers, stock class)
  › records of movements in and out of the herd along with liveweights

  › records of liveweight gain (mob averages can be used).
- A 'herd' is a group of cattle with similar characteristics under common management/treatment, but doesn't need to be the same animals.
- Consider your ability to manage the reporting responsibility for the project, or whether to engage a carbon service provider. CPC enlisted the support of carbon project developer South Pole during the project.
- Identify activities suitable to your enterprise to improve efficiency, to deliver:
  › increased weight for age of the herd
  › reduced average age of the herd
  › reduced proportion of unproductive animals in the herd
  › changed ratio of livestock classes within the herd to increase total annual liveweight gain.
- Record the required data and calculate the corresponding reduction in emissions using the Clean Energy Regulator's (CER) herd management calculator. ACCUs are issued when producers demonstrate that emissions from their herd are lower than they would have been if the activity or activities were not undertaken.

LESSONS LEARNT

- ✅ The Beef cattle herd management method (BCHM) rewards improvements in on-farm productivity.
- ✅ Good quality production data is required to take part in the BCHM.
- ✅ The BCHM methodology delivers direct benefits from lifts in productivity performance, and indirect benefits through secondary carbon markets.

TOOLBOX

- 🔊 CN30: **mla.com.au/cn30**
- 🔊 MLA's sustainability hub: **mla.com.au/sustainability-hub**
- 🔊 MLA's phosphorus hub: **mla.com.au/phosphorus**
- 🔊 Scan this QR code to read MLA's BCHM fact sheet.

TO DO

- 🔊 Complete MLA's carbon management e-learning modules.
- 🔊 Read more about the Clean Energy Regulator's (CER) Beef cattle herd management method (BCHM).
- 🔊 Work out your project's baseline with CER's herd management calculator.
- 🔊 Calculate property-level greenhouses gases: **carbon-calculator.mla.com.au**
- 🔊 Head into this year's spring bull sales with a clear genetic objective: **genetics.mla.com.au**
- 🔊 Follow another carbon journey in the winter 2023 edition of *Feedback*, page 40: **mla.com.au/feedback**

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Producers hit PayDirt
for soil performance

Producers in Queensland's Brigalow Belt have a new tool to combat soil infertility, with MLA's PayDirt program delving into the fertility requirements of pastures.

Soil fertility in this region has run down since the country was first cleared 40–60 years ago. Although this initial clearing led to significant nutrient releases, continuous grazing since then has depleted soil organic carbon (SOC). This means substantial fertility loss, particularly phosphorus and nitrogen.

The first PayDirt North course – part of the Profitable Grazing Systems (PGS) program – was recently run in the Maranoa region by contracted deliverers Peter Spies and Jill Alexander.

"Traditionally, producers have seen fertilising pasture as largely uneconomical – but with increasing land prices, producers are possibly better off doing more with what land they have, and addressing fertility," Peter said.

Input decisions

Through PayDirt, producers identify what soils are worthwhile fertilising, then look at their existing pastures to decide if fertilising is a worthwhile investment.

"They need to have a good base of what are termed '3P' grasses: perennial, palatable and productive," Peter said.

"It doesn't have to be a large body of feed, but there needs to be plenty of tussock cover which can respond to rainfall and fertiliser."

The next step is to assess soil fertility with sampling. Through the program, producers learn how to read and interpret the soil test results to recognise which nutrients are most limiting.

"We then combine these assessments into a decision matrix to make the best decision on what paddock is going to give them the best bang for their buck, and identify possible strategies to address nutrient deficiencies," Peter said.

Hands-on learning

PayDirt involves three half-day group learning sessions over three months, and access to individual coaching to develop property-specific plans.

Participants usually take one of two approaches:

- straight fertilisation of existing improved grass pastures

PayDirt deliverer Peter Spies recently completed the first program in Queensland's Maranoa region.

- a systems-based approach, whereby pastures may have been, or will be, oversown with legumes.

"Identifying and addressing limiting nutrients, combined with sound grazing management – and possibly incorporating legume species such as desmanthus and stylos in areas receiving reliable rainfall – is likely to result in more beef per hectare, through increased pasture growth and quality," Peter said.

"This biomass improves soil biology, resulting in improved soil health, sequestering more carbon, holding more moisture, increasing cation exchange and resulting in soil stability, drought resilience and the retention of valuable topsoil."

Peter appreciates that for many beef producers, soil testing and fertilising is a shift in management.

"I've seen results from improved pasture, sown on existing cropping land, as well as fertiliser placed deep in the soil. Over 14 months, an additional 174kg (218%) of beef was produced from this pasture versus conventional buffel pasture (254kg/ha of beef compared with 80kg/ha). Organic carbon increased by 27%.

"There's different thought on fertiliser, particularly in regenerative agriculture, but improvements can be achieved through both synthetic and non-synthetic approaches, via the plant sacrificing up to 40% of its sugars through roots feeding microbes.

"PayDirt seeks to educate producers about nutrients, soil health and building pasture quality and quantity, rather than the nutrient source." ■

SEASONAL ACTION PLAN

⚠ If you're considering fertilising to improve pastures, take a good look at your pastures and grazing management. You need a good 3P (perennial, palatable, productive) grass base to respond to the fertiliser.

⚠ Look at the signs. Is your pasture running down? Do you have deficiency symptoms? Have your growth rates and carrying capacity been declining over time?

⚠ Soil test to identify nutrient deficiencies and soil constraints and assess if inputs are required. You can't manage what you don't measure.

⚠ Look at the climate drivers. Are conditions likely to be right to fertilise? Is the El Niño Southern Oscillation (ENSO) Index positive? Are you likely to get rain? What is the Madden–Julian Oscillation (MJO) doing? You don't want to fertilise just to have it sit there.

TOOLBOX

◉ Profitable Grazing Systems:
mla.com.au/pgs

◉ MLA's healthy soils hub:
mla.com.au/healthy-soils

ℹ ✉ Peter Spies **info@pinnaclepocketcattle.com** ✉ Elizabeth Thelander **ethelander@mla.com.au**

Sustainable future is well-grounded

As the third-generation caretakers of their family's Maranoa property, Queensland beef producers Ash Duncan and Jess Morton are driving productivity, from the ground up.

Leon and Ree Price with their daughters Jess Morton and her husband Matt and Ash Duncan and her husband Nick.

SNAPSHOT

ASH DUNCAN AND JESS MORTON, 'Mount Hope', Wallumbilla, Queensland

AREA
13,800ha

ENTERPRISE
1,000 Droughtmaster breeders

PASTURES
Buffel, Rhodes, bluegrass, digitaria, black speargrass and native grasses

SOIL
Variable, including lighter sandier soils with a clay base, duplex soils and heavier black soils

RAINFALL
600mm

The sisters, along with their spouses and parents, are working on a succession plan to ensure the long-term sustainability of their holdings and provide a sound home base for future endeavours.

Pasture improvement

The property's soil types are variable, so Ash and Jess were looking for a program to help improve their pastures which, in addition to native grasses, are a mix of buffel, Rhodes grass, bluegrass, digitaria and black speargrass.

"Some of our pastures were getting a bit tired," Ash said. "It could have something to do with the season — we haven't had as much rain as normal compared to this time of year — but we thought if they're in need of fertilising, that's something we can do."

When Ash saw MLA's PayDirt North — co-delivered by Peter Spies and Jill Alexander — advertised on Facebook, it was exactly what she had been looking for.

"It seemed to tick all the boxes," she said. "I had met Jill before, on a Nutrition EDGE course, so I reached out to her and got our names on the list."

They volunteered to host the first session at Mount Hope, where Peter spent half a day on the property, discussing their goals and priorities, and taking soil samples.

"The pastures are not getting the height that they used to, which could be due to some sort of limiting factor, such as nitrogen or phosphorus. That will come back in the soil test," Ash said.

Strategic grazing

Once the pasture improvement program is underway, Jess and Ash want to split paddocks and start resting them. Previously, paddocks were continuously grazed and the bulk of the paddocks weren't rested.

"We picked the areas that were most in need of improvement," Ash said.

They targeted a paddock which was separated into two by a creek.

"The first part we sampled had been continuously grazed and was looking very tired. The area on the other side of the creek had been cutter-barred and improved, but had bulk feed which cattle were not utilising," Ash said.

Their plan is to split the paddock in two (either side of the creek) so cattle will utilise the area with a bulk of feed, while enabling the continuously-grazed side to be spelled.

"We are also looking to see what the improved pastures are lacking so we can give them a bit of 'oomph'. In pastures which haven't already been improved, Peter let us know what would grow best in those areas."

Their goal is to improve the pastures one at a time, with a view to getting the most out of them.

"The PayDirt program is great because we didn't know we needed fertilising or exactly what we needed for each pasture. We're waiting for the soil tests to come back now, which will show us what's limiting, and we'll go from there." ■

TOOLBOX

◉ PayDirt: **mla.com.au/pgs**

◉ EDGEnetwork: **mla.com.au/edgenetwork**

◉ MLA's grazing land management hub: **mla.com.au/grazing**

ⓘ ✉ Ash Duncan **ngandafduncan@gmail.com** ✉ Elizabeth Thelander **ethelander@mla.com.au**

Tillage and compost combat non-wetting soils

Arran Loechel is reaping the benefits of deep-tillage strategies to combat water-repellent sands at his Coomandook, SA, property.

He took over the reins of 'Booderoo' after swapping his career as a fencing contractor in favour of farming when the opportunity to manage came up. He's now transitioned into a part owner of the sheep and cropping property.

"I'd been very interested in running my own farm for years, so the offer to buy into a sheep and lamb business was hard to turn down," Arran said.

In 2019, Arran volunteered to host a demonstration site as part of the 'Improved grazing production on non-wetting sands' project (see story opposite) after experiencing several years of poor pasture growth.

"Nothing was growing, the soil was repelling water and we were willing to give anything a go," he said.

Identifying soil constraints

A 24ha paddock at Booderoo was selected as the demonstration site – the area was characterised by deep sandy soils and a heavy loam flat on the southern end, where limestone is present from 30cm.

Soil sampling in 2021 confirmed the paddock was moderately water repellent and potassium deficient.

The deep sand had high soil strength below 25cm, indicating compaction, as well as low nutrient retention throughout.

It supported Arran's observations of the declining quality of lucerne planted in the paddock.

"In the past, we used a Plozza Plow (a modified 5GP John Shearer one-way plough) on the deep sand with varied success, so I was interested in testing other strategies to treat the high soil strength."

The project team identified deep tillage as the best option to overcome compaction and reduce water repellence at Booderoo. Locally-acquired aged piggery manure and bedding straw was also used to boost fertility and lower the risk of erosion post-amelioration.

Treatment process and cost

To understand the most effective pasture production strategy on water-repellent sands, the paddock at Booderoo was divided up into 10 plots, which will be monitored until 2025.

In autumn 2022, treatments were applied on the 10 plots to:

- dilute water-repellent surface soil layers
- treat deep soil compaction
- treat nutrient deficiencies using mineral fertiliser and aged piggery manure.

Grazing

Cereal rye was chosen for its reliability as it's typically able to flourish in low-fertility, deep sandy soils. Vetch and Balansa clover were chosen as a base for its nitrogen and protein supply, and a grazing brassica was selected as an addition to increase diversity in both protein intake and root architecture underground.

Researchers used a Trimble GreenSeeker in July 2020, which indicated enhanced growth

in all the manure-treated plots, but only when combined with deep tillage.

In the absence of manure, deep rip was the only deep-tillage treatment that performed well.

On 11 August 2022, 4ha of the trial site was crash grazed for 24 hours with 1,900 dry sheep equivalent (DSE).

Dry matter (DM) measured in early September 2022 also showed the three deep-tillage treatments combined with manure to be the highest yielding – adding between 1.8–2.5t/ha of additional DM to the average 1.8t/ha yielded from the plots without manure.

"After grazing in August, the pasture recovered well owing to high spring rainfall," Arran said.

The November results showed the deep rip paired with soil mixing treatments were the highest producing, with the addition of manure showing an even higher yield. Both yielded more than 6.5t/ha of DM. This was 3t/ha greater than the average of the controlled plots that received no mechanical treatment or soil ameliorants.

This additional yield often came at the expense of dry matter digestibility, but there were no consistent trends in crude protein or metabolisable energy.

At the conclusion of the first year of this project, the results equated to additional gross income of more than $200/ha at Booderoo from a grazing perspective – however cost of amelioration has not yet been factored.

⌄ Arran's three steps to effective pasture production.

1 Address nutrient deficiencies

✓ Sulphate of potash applied across whole trial site at 125kg/ha – supplying 50kg/ha of potassium and 20kg/ha of sulphur

💲 **$220/ha**

✓ Aged piggery manure (sourced locally) and bedding surface, applied at 10t/ha – supplying 322N, 80P, 202K, 49S and 134Ca kg/ha

💲 **none**

2 Overcome compaction

✓ John Shearer one-way plough fitted with 9 'Plozza Plow' discs used to invert the surface 30cm of sand

💲 **approximately $150/ha**

✓ Bednar Terraland chisel plough was configured with 15 tines on 43cm spacings (6.2cm working width) and fitted with Active-Mix tines for easy soil penetration with optimised loosening to 55cm with some bottom-up and top-down mixing

✓ 'Deep rip' treatments were applied using a narrower shank tine and tip with no plates

✓ De-compaction and leveling was achieved in one pass using hydraulic spiked roller packers
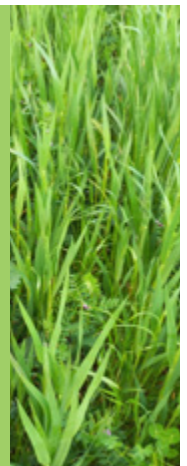
💲 **$45/ha**

3 Plant new pasture

✓ Ribbed roller was used to firm the surface of all tillage plots

✓ Mixed species pasture planted 27 May 2022 – comprised of 30kg/ha cereal rye, 2kg/ha grazing brassica, 30kg/ha vetch and 1kg/ha of Balansa clover

💲 **$82/ha**

⌄ Arran and Anika Loechel with their children.

SNAPSHOT

ARRAN AND ANIKA LOECHEL (MANAGERS), 'Booderoo', Coomandook, SA

AREA
4,000ha

ENTERPRISE
Sheep (5,000 Merino ewes) and cropping

PASTURES
Kikuya, lucerne, medics, vetches and cereal mix

SOIL
Limestone, red/brown loam, loamy sand, sand and black clay

RAINFALL
350mm

Recent results

Following the first year of treatment, the cereal rye was harvested for seed and was grazed for the third time over the 2022–23 summer.

"We ended up having a bit of pasture for grazing in our other paddocks, so we decided to lock up the treatment site and let the pasture thicken and green up to utilise it for its seed," Arran said.

"On Anzac Day, the paddock was sown with an annual fodder crop. Dry conditions after sowing really showed the benefits of overcoming repellence last year.

"The plots where we used the Plozza Plow were all up and away early, while the other treatments were slower to get going.

"We've been fortunate in getting lots of rain over the past two years, so I'm really interested to see how the site holds up during the dryer season."

The demonstration site has since been stocked for another round of grazing and Arran plans to continue to monitor and trial different techniques to address water repellence going forward over the two years remaining in the project. ∎

ℹ ✉ Arran Loechel
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Tapping into productivity in water-repellent sands

Researchers in SA are targeting ways to boost productivity in infertile and compacted sandy soils.

For producers across the southern region of SA, Victoria and WA – especially in the low rainfall zone – sandy soils commonly have physical and chemical constraints that restrict root growth and crop water-use efficiency.

The MLA-supported SA 'Improved grazing production on non-wetting sands' project, involving the Coorong and Tatiara district councils, is evaluating technologies and techniques to overcome the challenges of sand soils at three properties.

Principal consultant Dr Mel Fraser from Soil Function Consulting said these strategies aim to:

- treat common constraints, such as water repellence, compaction and poor nutrient fertility to grow more pasture
- maximise rain-fed soil moisture and fertiliser use to reduce the overall cost of production per hectare
- increase livestock productivity and performance.

What is non-wetting sand?

Water repellence forms when waxes from decayed organic material coat grains of soil, making them repel water. This inhibits water entry into the soil and promotes run-off.

Traits in these sandy soils include:

- low water holding capacity
- low organic matter
- low nutrient availability
- compaction
- water repellence
- acidity
- high risk for wind erosion.

"Compared to loams or clays, sands are more prone to repellence because the soil particles are larger with a smaller surface area," Mel said.

"This leads to patchy plant establishment and a staggered germination of weeds, reducing yield potential of crops and pastures at the start of the season."

Test for soil repellence

Producers can assess their pastures for water repellence by following the guidelines at the Coorong Tatiara Soil Hub website – see toolbox on right.

"The ideal time to test for water repellence

is in the late summer to early autumn period when the soil is dry," Mel said.

"Tests are typically done a year in advance to taking action, however, severe constraints need to be addressed as soon as possible."

Addressing constraints

Mel said after producers have tested their soils and determined their constraints, options such as clay spreading, if available, or deep tillage and mixing, should occur in late summer to autumn.

"Nutrient deficiencies should also be addressed at this time. Composts applied on the surface after mixing may help to stabilise the soil and boost pasture growth.

"Being in a winter rainfall-dominant region, the ideal time for producers in southern regions to complete tillage, mixing and sowing is mid-March to mid-April."

Mel said producers involved in the trials were realising the benefits from best practice soil management.

"We've definitely seen the on-farm benefits, not just from a productivity perspective, but also from a chemistry, fertility and biology perspective.

"But for our producers who were involved, the most important aspect was that they were able to stock their trial sites for grazing within a year of treatment." ∎

⌄ Soil consultant Melissa Fraser.

TOOLBOX

- ▸ Test for soil constraints in areas of contrasting pasture growth – scan this QR code on how to take soil tests.
- ▸ Coorong Tatiara Soil Hub: **ctsoilhub.au**
- ▸ MLA's healthy soils hub: **mla.com.au/healthy-soils**

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Zanda McDonald Award
hits the bullseye

The red meat industry recognised a young NSW innovator as this year's Australian winner of the dual Zanda McDonald Award.

Mitch Highett, founder of agricultural advisory start-up Bullseye Ag, was co-winner of the prestigious gong, along with New Zealander Harriet Bremner — a sheep and beef producer, farm health and safety advocate, and children's book author.

Mitch said a highlight of the award was the opportunity to learn from other nominees and connect with industry leaders.

"I've talked with the best in the business about how they got to where they are, personally and in their careers," Mitch said.

Career path

While he was at school in Sydney, Mitch's interest in farming was sparked by hearing his grandfather reminisce about working on farms in NSW and Queensland. His future in agriculture — further fuelled by weekends spent at his family's hobby farm in central west NSW — was sealed by the time he finished school.

In 2007, Mitch headed off to Texas, USA, and spent his gap year on a cotton and peanut ranch — an experience which further cemented his desire to forge a career in the agricultural industry.

Mitch went on to study Agricultural Business Management and notch up industry experience in Canada, USA, the UK, New Zealand and Sydney in agricultural advisory work. He recognised an opportunity in the market for advisory and management services for the 'smaller end of town', and in 2016 launched his own solution: Bullseye Ag.

Based in Orange, NSW, Mitch and his team now manage an impressive suite of properties beyond the initial target of family-based investors — with government and corporate clients now on the books.

He recognises the value of soft skills he's learnt along the way.

"I've certainly learned the importance of being kind. People think you have to be hard-nosed and abrupt in operating and running a business, but I've got a lot more out of being kind and empathetic from a client and employee perspective," Mitch said.

Deserving winner

As a key sponsor of the award, MLA aims to support emerging leaders and, in doing so, build the capability of the red meat industry.

Mitch's initiative and willingness to back himself made him a prime contender for the Zanda McDonald award and will ensure he makes the most of its financial backing and access to a Rolodex of influential industry contacts.

Mitch looks forward to learning from other key players in the ag industry during the mentoring component of his prize, which includes $10,000 towards education or training.

It's already given him the opportunity to see how other businesses pitch their services to clients and see how this could be built into his own business.

The Australian winner of this year's Zanda McDonald Award, Mitch Highett.

"The nominees received PR and media training at the award's inaugural Impact Summit. We learned the importance of speaking clearly and succinctly and knowing our topic area," Mitch said.

"It's also really important to just be yourself — if you try to mimic and be someone you're not, it will come across as untrustworthy and false."

Broaden horizons

For those without a background in agriculture who want to carve out a career in the industry, Mitch recommends connecting with people who are in the position to help.

"Don't be afraid to say you're from a non-traditional farming background — be willing to chew the dust a bit before you make it. You've got to get out there and do the hard work and even work for nothing to get some experience behind you," Mitch said.

Looking to the future, he hopes to broaden Bullseye Ag's reach within Australia and possibly New Zealand and one day own his own patch of Australia — with a cattle enterprise at the top of his bucket list. ■

TOOLBOX

Zanda McDonald Award: **zandamcdonaldaward.com**

MLA's scholarship opportunities: **mla.com.au/scholarships**

Bullseye Ag: **bullseyeag.com**

ℹ ✉ Mitch Highett **mitch@bullseyeag.com** ✉ Joshua Whelan **jwhelan@mla.com.au**

Taking on the north's biggest challenges

MLA and the Australian Agricultural Company (AACo) have partnered on a new project to address two of the big, complex challenges facing Northern Australian livestock production systems: horned cattle and infectious reproductive diseases.

The partnership aims to help producers by:

- improving the reproductive efficiency of breeding cattle (males and females)
- increasing the number of calves weaned by integrating clean bulls and heifers into the herd
- increasing adoption of strategic testing and vaccination processes.

Many benefits

Introducing polled cattle and better managing reproductive diseases offer several significant benefits for the northern cattle industry:

Improved animal welfare and safety: Polled cattle are naturally hornless, which not only eliminates the need for dehorning, but also reduces injuries within the herd and the risk to handlers.

Productivity: Reproductive diseases can significantly impact the productivity of cattle by affecting fertility rates and calf survival. Better managing these diseases means more cows successfully breeding and rearing calves to weaning each year, improving overall herd productivity.

Sustainability: Healthier, more productive animals require fewer inputs (like feed and medicine) per unit of output (meat), making the operation more environmentally sustainable.

The first steps

AACo Innovation Projects Officer Eliza Gray said the project's first stage was underway, which aimed to determine endemic diseases in Northern Australia.

The diseases identified by the landmark MLA-supported CashCow project included:

- vibriosis
- pestivirus
- leptospirosis.

"Findings from CashCow highlighted the negative effects seroprevalence [a proportion of the herd affected] of pestivirus had on reproductive performance. To combat this, disease tests will be conducted across our property portfolio to inform the development of a management program," Eliza said.

"This program will then be tailored to meet the complexities of large-scale production systems and animal movement across our supply chain.

"For example, the initial focus has been to substantially increase the amount of testing and investment in disease control in the bull breeding units that send cattle to AACo stations."

Next steps

In collaboration with MLA, the University of Queensland and CSIRO, AACo will next focus on a harnessing research from previous studies to further support their poll testing method.

Senior Research Analyst Matthew Kelly, who specialises in breeding polled cattle, said this area of the project takes its foundation from the original Australian poll test while drawing insights from overseas research in the dairy sector.

"It's been suggested that 'scurs' – the horn-like growths which can occur in genetically polled cattle – are a heritable trait," Matthew said.

"This implies that through selective breeding, the presence or absence of scurs can be controlled to an extent, adding another layer of complexity to the science of cattle breeding.

"On the surface, breeding for poll seems simple given there's a highly accurate test for the poll gene. However in practice, adding emphasis on poll into a breeding program requires careful consideration as it takes emphasis away from other economically important traits and may also increase inbreeding.

"Additionally, during the introgression process there are a proportion of animals which, while genetically polled (carrying one copy of the poll gene), still develop horn-like scurs that need to be removed.

"This poses the challenge of how to manage scurs and select against them concurrently whilst breeding for poll."

Three tips to care for cattle

"Healthy, happy and well-cared-for cattle are integral to the sustainability of AACo's operations and we're committed to a continued pursuit of best-in-class animal health and welfare practices," Eliza said.

Her tips for producers to protect their stock include:

- play your part in minimising the spread of preventable cattle diseases – read the *Immune ready guidelines* at **immuneready.net.au**
- ensure vaccinations are handled, recorded and administered correctly – learn more at **mla.com.au/vaccinating**
- use pain-relieving products when conducting surgical procedures such as dehorning: **mla.com.au/pain-relief**
- consult with your local veterinarian for further advice on vaccines and pain mitigation. ■

TOOLBOX

- Immune ready guidelines: **immuneready.net.au**
- MLA genetics hub: **genetics.mla.com.au**

App a sight for sore eyes

MLA is funding the development of a cutting-edge classification tool which uses artificial intelligence (AI) to assess cattle eye disease.

Eye disease costs the Australian cattle industry up to $50 million/year in treatment and productivity loss. It impacts animal health and welfare, and poses occupational health and safety risks for people working with animals which have an eye disorder.

Previously, trained veterinarians have been the only option for correct diagnoses of eye disease, which can be challenging for beef producers in remote areas.

Now, the app EyescoreAI could be used to predict the stage and severity of eye disease in cattle, and evaluate the necessity for treatment, to support real-time decision making by producers.

How it works

While the app is currently in beta testing phase, here's a look at how it could be used on-farm when it's fully developed.

If a producer suspects an animal has eye disease, they can snap a photo of their eye and upload it, along with information to assist the AI diagnosis and to keep a record of livestock. This information includes the property identification code and animal identification numbers, the animal's age and its health status.

After the image and information is uploaded, the app will provide an assessment of factors such as visibility of swollen eyelids or conjunctivitis, and condition of the cornea.

Benefits

The app allows producers to identify eye disease in its emerging stages, for prompt intervention and treatment.

This early intervention can significantly reduce the risk of weight loss, mortality in young stock and corneal scarring — ensuring herds remain productive and profitable.

Pinkeye alone is estimated to occur at least once a year on 80% of southern cattle properties — it can cause 1% mortality in young cattle and contribute to permanent and temporary weight losses. It can also cause severe scarring on the cornea, precluding cattle from sale.

The net gain from moving all southern herds experiencing pinkeye to the lowest level of disease is estimated at $3.8 million/year.

How to access the app

The EyescoreAI app is accessible for iPhone users via the Apple store, and for Android users on Google Play.

At present, the app's functionality is limited to just uploading images, with the AI predictive feature set to be integrated into the existing app once it achieves satisfactory accuracy levels.

In the future, the app has potential to introduce a herd score calculation feature, based on disease prevalence within the herd, to predict the risk of infection spreading and offer producers a proactive approach to herd management.

The EyescoreAI app has an intuitive interface, making it straightforward and easy to use. However, to ensure users are fully aware of the app's predictive capabilities and limitations, workshops will be organised in the future. ∎

⌃ Eye disease is a costly issue for the cattle industry, but there are intervention strategies available.

ℹ️ ✉️ Michael Laurence **mlaurence@mla.com.au**   ✉️ Sharon Dundon **sdundon@mla.com.au**

Preventing eye disease in your cattle

AI technology (see story on left) is only one tool in managing eye disease — here's a look at how producers can take action to reduce risk in their herd.

Infectious bovine keratoconjunctivitis, otherwise known as IBK or pinkeye, is a multifactorial disease which results in infection of the eye.

Infections can be extremely debilitating for an animal, and can lead to weight loss, mortality and severe corneal scarring which can preclude them from market sale.

Eye disease occurs in all cattle-producing regions of Australia. Causes relate to a combination of factors such as:

- high dust levels
- high fly concentration
- low rainfall
- region (southern)
- a large grazing property
- *Bos taurus* cattle breeds (Herefords are highest risk)
- young stock.

Prioritise prevention

Steps to preventing eye disease in cattle include:

- manage dust exposure
- don't overstock paddocks or pens
- remove items and plants that pose a high risk for eye trauma
- use fly control.

Treatment

If your cattle are found to be infected, topical antibiotics may be used to treat disease.

Treatment needs to be applied daily to ensure corneal levels remain at therapeutic levels — however, veterinarians may inject a depot of antibiotics into the cornea that can last several days.

Eye patches and isolation can also be used to further reduce the spread of the disease, and pain relief can be used to mitigate pain.

TOOLBOX

- Eye disease resources: **mla.com.au/pinkeye**
- ParaBoss: **paraboss.com.au**

Using data to back decisions along the supply chain

One of the world's largest cattle supply chains, Australian Country Choice (ACC), is increasingly relying on data-driven decisions.

ACC recently developed its data capture, integration and reporting systems, connecting every segment of the value chain to transform how it makes decisions across 1.75 million hectares of land, three feedlots and its Brisbane processing facility.

Maintaining oversight of the entire value chain has given ACC management a clearer picture of the impact, profitability and efficiency of their investment in technology.

Here's a snapshot of how ACC has linked data capture, input and analysis from farm to processing facility, and ultimately, to market.

Adopting new technologies

ACC partnered with MLA's Co-Innovation program to employ specialist staff to enhance digital capability and employee engagement in a project to improve data integration across its farms, processing plant and markets. Collectively they called these roles the 'data lab'.

This was not simply a 'set and forget' process — rather, it required ongoing monitoring to overcome the challenges ACC faced to maintain quality data across all sectors of the business.

These challenges included:

- connectivity issues which delayed data replication
- manual data syncing which disrupted day-to-day operations
- limited technical support for on-the-spot resolutions
- making sure staff understood the benefits to them and the company.

A solution was to implement automated systems across ACC's businesses, to provide timely and meaningful information.

Digital infrastructure, as well as automated and whole-of-life reporting, has aided data collection within ACC's processing facility.

Processing

ACC's Processing Analyst Lewis Habraken said the processing facility component of the project focused on using data to create daily snapshots of profitability and whole-of-life animal performance. This was done using:

- **Digital infrastructure:** Hot carcase scanning to predict lean meat yield, eating quality and marble score supported the goal of sorting carcases for boning prior to entering the chiller.
- **Automated reporting:** Improved monitoring and traceability of out-of-spec carcases, to identify the cause of non-compliance and link to factors such as vendor, breed or operational and transport activities.
- **Whole-of-life reporting:** The ability to quickly identify high and low-performing cattle and carcases so the business can develop strategies to remove low-performing cattle earlier in the production process.

"This reporting allowed us to better understand individual animal performance. It generated more complete datasets on cattle which can be taken back to the producer so they can identify where changes can be made on-farm, to improve productivity and profitability," Lewis said.

Lessons learnt

- Small changes in daily efficiency gains can add up to significant annual savings.
- Without detailed data, opportunities for improvement are not always obvious.
- Access to quality data is critical to help build better cost–benefit calculations for capital expenditure decisions.

ACC also owns three feedlots, maintaining data collection through their entire value chain.

On-farm

ACC now uses semi-automated crush-side data collection as part of day-to-day farm operations to collect critical cattle data, including:

- breed
- weight
- dentition
- sex
- *Bos indicus* content
- pregnancy status
- body condition score.

With this information, up-to-date dashboards are generated on various profit drivers, including fertility, average daily gain (ADG) and feedback on genetic traits.

ACC Agribusiness Analyst Lauren Evans said an important part of integrating new technologies was to train all staff in using the reporting software.

Data collection has led to a host of business and productivity benefits at ACC.

"We created a 'leading from behind' culture, which made sure operational teams provided input in all stages of the project – this promoted engagement and buy-in, ensuring a smooth transition into this new data collection process," Lauren said.

ACC collected production data over several years to understand the importance of several key traits and their contribution to individual animal performance and value. This data helped improve management decisions across the business and contributed to:

- shortened calving window
- improved calf survival
- improved predictions of when cattle will reach feedlot entry weight, to inform processing schedules
- improved stocking rate and turn-off decisions
- successful registration of a 'Beef cattle herd management' carbon project, as well as improved understanding of individual methane emissions.

Lessons learnt

- Provide training and support for staff as they implement changes, so the team works together to build a system which has the least amount of disruption and maintains data integrity.
- Collect as much data as necessary to create a complete picture of individual animal performance.

Market

ACC now draws on the data and insights generated on-farm and in the processing plant to fine-tune its strategy of marketing its beef products.
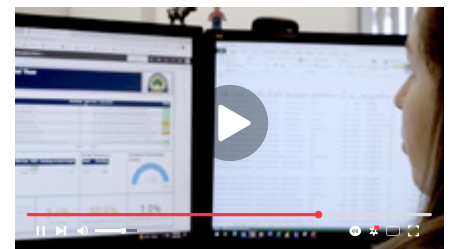
During this project, a forecasting tool and carcase utilisation model were developed to manage sales and other commitments in advance. This means ACC's beef products can be more proactively managed to minimise unnecessary expenses and otpimise sales to new customers.

Lessons learnt

- Full supply chain data shows the true profitability of the business, from gate to plate.
- Forecasting and utilisation tools help prioritise markets and product development opportunities.
- Data can help identify and remove low-performing cattle earlier, creating an opportunity to increase business efficiency.

Chris Lutton, ACC Market Analyst, said these systems improved understanding of how ACC can optimise production.

"Along with new carcase utilisation models, we've been able to use our sales data to inform decision making at all steps of the business. Feedback and demand planning at the farm gate will help determine cattle that producers breed, keep, feed and buy to support their business goals," Chris said.

What it means for wider industry

Linking data from farm to processing facility to market has supported better insights about the impact of practices and processes across the supply chain to drive improved decision making.

For ACC, this data was used to optimise performance drivers through the supply chain to ensure the business remains sustainable and produces high quality, consistent products.

Merrick Studders, ACC Chief Commercial Officer, said the insights from this project can be applied to other red meat businesses.

"For others looking to improve capacity in their own business, this project has demonstrated how data can be collected, integrated and analysed efficiently, and used to make more-informed decisions across the supply chain."

He said key areas red meat business operators could focus on to capture efficiencies from data include:

- using individual cattle data to measure overall emissions intensity
- improving animal fertility and performance, to reduce emissions intensity
- aligning product with consumer expectations
- lowering production costs through greater efficiencies
- the ability to demonstrate animal welfare and wellbeing practices
- combining data from other tools – such as satellite imagery and predictive modelling for pasture biomass, rainfall and feed availability – to link livestock production data with environmental production data. ■

Using data to optimise the Australian Country Choice supply chain: **Scan the QR code to watch on YouTube.**

TOOLBOX

- MLA's Co-Innovation program: **mla.com.au/co-innovation-program**
- Livestock Data Link: **integritysystems.com.au/ldl**
- MLA genetics hub: **genetics.mla.com.au**

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Biosecurity and animal welfare
part of Asian market recipe

MLA's markets team in South-East Asia has been focusing on enhancing biosecurity, improving animal welfare and developing markets — all part of the goal to maintain Australia's position as a high quality exporter of red meat. Here's a look at what's been happening in Vietnam and Indonesia.

Improving processing in Vietnam

MLA led training and development at the VISSAN abattoir near Ho Chi Minh City, Vietnam, to improve how products are processed to better meet changing consumer demands.

Vietnam's primary red meat sales occur in traditional wet markets, but modern grocery retail outlets are becoming increasingly popular and estimated to grow by 21%/year over the next few years.

Supporting meat processing in Vietnamese abattoirs ensures the quality of Australian red meat is not lost and opens opportunities in this premium grocery market.

Australian butchery consultants trained more than 600 people in Vietnam.

As a result, processing staff at VISSAN abattoir are now:

- monitoring pH levels
- swapping from hot boning to 100% chilled boning
- processing high quality steers instead of cheaper quality bulls
- improving transport conditions in the lead-up to processing
- better understanding meat colour
- initiating vacuum packaging.

Since implementing these changes, throughput to modern retailers has increased by 40%.

Training Indonesia's vets

In the wake of biosecurity incursions — including foot-and-mouth disease (FMD) and lumpy skin disease (LSD) — across South-East Asia, vets, feedlotters and slaughterhouse workers in Indonesia underwent training to enhance their processes.

These 'train the trainer' sessions covered disease mitigation (such as prevention, diagnosis and response), necropsy and animal welfare as a way to support worker retention, feedlot-based nutrition, and preparation for a biosecurity incursion.

Five workshops have been completed, plus 14 additional necropsy training sessions, and participants and trainers are gaining confidence in their new abilities to combat and mitigate poor practice and biosecurity.

Developing Vietnam's animal welfare

As part of their strategy to enhance animal welfare practices, the Vietnamese government has been collaborating with the Australian red meat industry to develop new standards to improve on-the-ground processes, reporting and traceability.

Following Vietnamese delegations to Australia, traceability technologies were trialled in Vietnam. An online learning system was implemented to train and assess workers, and 20 animal welfare officers and 75 abattoir staff were trained in animal welfare.

Further trials and research will continue to the end of the year, with an important goal of upholding high standards, to sustain Australia's positive position in international markets. ∎

⌃ Dr Suwarni undertook the Indonesian training to improve her knowledge of diagnosing diseases related to feedlot production.

Animal health with Dr Suwarni

Dr Suwarni heads up the Animal Health Unit at two Indonesian feedlots, where she oversees the health of more than 300 head of cattle per day.

She heard about MLA's Indonesia training program from MLA's Indonesian Livestock Services Manager, Dr Helen Fadma. Dr Suwarni registered herself and her team of one vet and six paravets (veterinary assistants).

"The topics around disease management, especially on FMD and LSD, are extremely relevant to the challenges currently faced by our cattle industry, so it was imperative we attended," Dr Suwarni said.

Dr Suwarni said on-farm biosecurity, vaccinations and establishing buffer zones are essential to mitigating emerging diseases in Indonesia.

"We also need to keep improving animal welfare practices, especially around animal handling in the feedlot."

Dr Suwarni said she learned a lot from the workshop and necropsy training, particularly in diagnosing diseases related to feedlot production.

"Australia has made a big contribution to the animal welfare improvement of Indonesia, particularly thanks to their biosecurity and vaccination programs. I hope that we can extend the support to downstream industries such as beef processing and butchering, and I also hope we can have continued support between our nations to improve our combined industries."

⌃ Enhancing product quality in Vietnam creates market opportunities for Australian red meat.

ⓘ ⦿ **mla.com.au/international-markets** ✉ Spencer Whitaker **swhitaker@mla.com.au** ✉ Helen Fadma **hfadma@mla.com.au**

In market
growing demand

A 360° look

A team of chefs and food influencers from around the world recently descended on Melbourne to showcase Australian lamb from paddock to plate.

MLA's Lambassador initiative is a global project which identifies influential food professionals from around the world who are passionate about cooking with Australian lamb. Those selected partner with MLA on a voluntary basis and work together to create awareness and promote the consumption of Australian lamb in their home countries.

A taste for lamb

During this year's delegation to Victoria, the Lambassadors visited a sheep property, toured a lamb processing plant, experienced the 'most beautiful butcher shop in the world' (Victor Churchill), had a master class on lamb carcase breakdown, and explored Melbourne's vibrant food scene. The program received funding from the Victorian Government.

Here's a look at the 360° of lamb production, from paddock to plate to social media platform.

LAMBASSADOR
of Australian Lamb

⌃ MLA's Retail Manager and Corporate Butcher Doug Piper discusses with Lambassadors how to use the right cut to suit the cook method. Image: Jana Langhorst.

The producer

Victorian sheep producer David Fowles and property manager Ed Mercer hosted the Lambassador delegation for an immersive tour of their farm and Merino and Highlander (composite) flocks.

The Fowles family produce lamb and wine, showcasing both at their winey and restaurant.

"It's a big responsibility to feed our nation and other nations beyond that, but we do get a lot of joy from what we do and are proud to be a part of it," David said.

"Programs like Lambassador make me feel even prouder because it's amazing to see how high our lamb is regarded on an international scale."

Ed took the Lambassadors through how they produce lamb, including the on-farm management required to meet the Meat Standards Australia (MSA) grading process.

"It's great an Australian product is so thoroughly appreciated around the world, but it's even better when the work behind it is just as appreciated," Ed said.

"Australia has a great system in place in terms of meeting our production cycle goals, so it's really important to share what we do with the Lambassadors who will in turn retell the story, in their home countries, of the work that's behind the product they know and love."

✉ Ed Mercer
edmercer@gmail.com

⌃ David Fowles gave the Lambassadors insights into how lamb is produced. Image: Jana Langhorst.

The butcher

MLA's Retail Manager and Corporate Butcher, Doug Piper, joined the Lambassador crew at Fowles Restaurant to perform a butcher master class. He demonstrated the carcase separation process and highlighted key cuts.

With more than 40 years' experience as a butcher – 16 with MLA – Doug has broken down his fair share of lamb carcases. Through his work across the independent retail channel with butchers/wholesalers and the foodservice industry, Doug's goal is to encourage uptake of Australian red meat.

"My role is to engage, inspire and educate traders and consumers about whole carcase utilisation," Doug said.

"During my presentations I demonstrate the versatility of the entire range of cuts from a lamb carcase, explain their muscle functions and ideal marinade for each cut and cooking method."

According to Doug, a good lamb carcase which suits today's domestic retail market is one with a good fat coverage (around a 2–3 fat score) which weighs 20–24kg.

"Australian producers are already doing fantastic work growing the best lamb around the world and – thanks to excellent growing seasons over the last couple of years – there's plenty of it to go around," he said.

✉ Doug Piper **dpiper@mla.com.au**

18 Lambassadors from 15 countries

at lamb

More than 2 million followers across the Lambassadors' social media platforms

56kg
of lamb cooked
by the Lambassadors

» The 2023 delegation of Lambassadors.

The influencer

Angela (Yoo-Kyung) Kim is a food director based in Seoul, South Korea.

The former food reporter (for Digital Chosun Ilbo, one of Korea's leading media outlets) and Master Chef Korea contestant is now an influencer, who creates content through YouTube, blogging and Instagram.

Since joining the Lambassador team, Angela has dedicated time to exploring restaurants across South Korea which serve Australian lamb and posting about them on her social media platforms.

She also showcases her home-cooking skills online and takes her audience through ways to prepare and serve lamb.

Angela said lamb is considered as something only the elite consume in Korea — a mindset she hopes to change.

"Lamb was hard to come by for many decades in Korea, so not many are familiar with cooking or buying the product," Angela said. "However, Australian imports have since risen and lamb is becoming much more accessible.

"My goal is to teach people that no one is too ordinary for lamb, by not only encouraging them to enjoy Australian lamb at restaurants, but to show them the ways it can be cooked at home for family meals."

While South Korea produces lamb and imports lamb from other countries, Angela said Australian lamb is outstanding for its size and taste.

"In fact, the flavour alone makes my home-cooked meals taste like fine dining."

✉ Angela Kim **angelakim@tastykorea.kr**

⌃ Lambassador Angela Kim works with her teammate to prepare a lamb dish for a cooking challenge at the MCG. Image: Jana Langhorst.

The chef

Mexican-born chef Laura Ozyilmaz travelled from the US with one goal: she wanted to be able to tell her customers the story of lamb, from the Australian paddock to their plates in her Californian restaurant.

Laura and her husband, Sayat, run an Eastern Mediterranean restaurant, Dalida, in San Francisco, California. It's the recent addition to their previous co-owned Noosh and Istanbul Modern restaurants.

Drawing on Sayat's Turkish background, they aim to give Eastern Mediterranean cuisine more exposure in San Francisco while keeping themselves unique with the use of Australian lamb.

"We attract a lot of Lebanese, Israeli, Palestinian, Turkish and Arab diners to our restaurant — they've grown up with a love for the culture of sharing dishes, so our use of Australian products is one of the biggest components that makes the dining experience unique for them," Laura said.

Laura and Sayat began working with Australian lamb and beef early in the development of their restaurant, thanks to its exceptional quality.

"Lamb features a lot on our menu, so we needed something which was consistent — in terms of size and flavour, Australian lamb was great every time.

"It's also incredibly versatile which meant we could cook it in different ways, and it would still have great taste and texture.

"We've even created new dishes to showcase the Australian lamb on its own with flatbread, because it's just that unique and enjoyable."

Laura said her customers want to know what Australian producers are doing to create something so good.

"I could tell my customers about the fat score of Australian lamb, but I couldn't tell them about how the lamb was reared on-farm, which is why I joined the Lambassador program," she said.

"Now I can confidently tell my customers about Australia's high standards in terms of animal carcase and sustainability on-farm, and I can tell them about the work that goes into feeding and managing them in the paddocks.

"We're very proud to say we cook with Australian lamb because it's such a reliable product and now that we have the background to back why it's so good, we can confidently tell our customers we are serving them the best product in the market."

✉ Laura Ozyilmaz **laura@dalidasf.com**

⌃ Chef Laura Ozyilmaz at the Melbourne Cricket Ground for a Lambassador cooking competition. Image: Jana Langhorst.

250 lamb dishes presented by the Lambassadors

Mates enjoy Aussie beef

The Aussie Beef Mates (ABM) program made its debut this year as part of MLA's Aussie Meat Academy initiatives.

The inaugural group of 15 international food professionals gathered in NSW to explore the paddock-to-plate story of Australian beef, from Byron Bay to Sydney to the Hunter Valley.

They visited farms, toured the Casino Food Co-op beef processing plant and Victor Churchill's Sydney store, participated in a beef cooking masterclass with MLA's Corporate Chef Sam Burke, and experienced NSW's diverse food scene. The program received funding from the NSW Government.

15 Aussie Beef Mates from **11** countries

The Aussie Beef Mates developed more than **300 social media posts,** which reached more than **2.5 million accounts** across different social media platforms

AUSSIE BEEF MATES

Hear from the Aussie Beef Mates in MLA's *On the ground* podcast:

Episode 63
mla.com.au/feedback-on-the-ground

Meet two Aussie Beef Mates:

The head chef

Indonesian chef Kartika Chandra joined the Aussie Beef Mates delegation with hopes to broaden her knowledge of the Australian beef industry and educate her customers back home about what Australian beef producers are doing on-farm.

Kartika works as head chef at TOMA Brasserie in Jakarta and has more than 10 years of cooking experience across Singapore, Malaysia and Indonesia.

Inspired by the rich culinary history of Asian cuisine, Kartika strives to incorporate modern presentation in these traditional recipes, with the help of Australian beef.

"We cater to the Muslim community on a large scale, so beef is a highly demanded product, which is why it was important to me to source a high quality halal product."

Kartika said one of the standout features of Australian beef is its versatility.

At TOMA, Kartika's kitchen crew specialise in cooking with secondary cuts — however, they're hoping to attract bigger crowds with a newly introduced Sunday BBQ for brunch.

"Secondary cuts are more suited to the Asian cuisine we are familiar with, but we're enjoying exploring prime cuts," Kartika said.

"It's a very Australian thing to gather around a barbeque and enjoy a steak and I hope it will become a selling point for us."

Drawing on her experiences as part of the Aussie Beef Mates delegation, Kartika plans to use TOMA's Sunday BBQ to share the breeding, genetics and pastures behind the meat with her customers.

"I love being able to tell my customers what they're eating is ethically sourced, healthy and nutritious — and Australia is doing a good job of providing me with the product to do just that."

The executive chef

Considered a master of fusion cuisine, thanks to mixing western style with Chinese dishes, Aussie Beef Mate Chef Roger Shen holds the title of executive chef at Fuchun Resort in China.

Chef Roger has 30 years of culinary experience from five-star hotels and several of the world's top 50 restaurants under his belt. However, his passion for cooking dates back even further.

After suffering his father's failed cooking attempts while his mother travelled for work, Chef Roger took on the task of cooking dinner at just seven years old.

Today, he ensures his young daughter is always served the perfect plate, which often includes red meat from Australia.

"Australian beef has a good reputation for not only its good flavour but its trustworthy and sustainable background," he said.

"It's something I promote to my customers in China, and following the ABM delegation, I will have great knowledge to back what I am already telling them."

He said food safety is a huge concern in China, especially surrounding meat products.

"Following the outbreak of COVID-19, people have become more concerned about the origin of their meat products," he said.

"Australia's on-farm practices and product traceability procedures are great in giving consumers the confidence that their red meat is not only safe, but of high quality."

> **"Australian beef has a good reputation for not only its good flavour but its trustworthy and sustainable background."**

Aussie Beef Mates **foodservice.aussiebeefandlamb.com/beef-mates** ✉ Sharon Ng **sng@mla.com.au**

App serves up eating habits

T he red meat industry now has a better understanding of how consumers eat, thanks to MLA's research into the moment of consumption.

The Consumer Protein Landscape (CPL) research used mobile technology to collect meal consumption data from 2,100 consumers, providing insights into how industry can better market products to drive demand.

Meal diary

Over seven days the consumers, aged 15–74, captured every meal and snack they ate via an app. They recorded their consumption in real-time, which improved the accuracy of data collected.

Collectively, the app captured:

- 50,116 meal occasions
- 85,000 meal images
- motivations and reasons for eating the meal
- the meal occasion types (such as their location, activities, and if they ate alone or with others)
- time and day.

The insights provided by this food consumption diary highlighted the needs and motivations of food choices within various consumer demographics.

For example, the research provided information on:

- eating moments throughout the day
- needs and motivations when eating
- social behaviours when eating
- role of proteins on different occasions
- health and nutrition
- tastes based on ethnicity
- foodservice and retail
- opportunity volume sizing.

When, why and how we eat

Here's a closer look at some of the CPL insights.

What do meals throughout the day look like?

A quarter of the day's total food consumption happens at breakfast – however, what people do while eating breakfast differs between generations:

- **Those aged 15–19 typically eat breakfast while watching TV.**
- Those aged 60 and older demonstrate more traditional behaviour, with about **one-third of breakfasts eaten while sitting at the table.**
- **Mothers aged 30–39 eat 54% of breakfasts while they are preparing for the day** or getting children ready.

At lunch, consumers typically seek meals which are quick, easy and convenient, with enough calories to fill them up and keep them going through the afternoon. However, **those who eat lunch late are more susceptible to choosing a meal that will primarily satisfy their cravings.**

During dinner, 40% of meals are eaten while watching TV, compared with 31% sitting at the table – and those aged 60–74 prefer the table. **For child-centric families, healthy and easy meals are the most sought after,** and beef mince and sausages are prominent choices.

Dinner is the red meat heartland

Fresh meat consumption is relatively low during breakfast – an occasion where processed pork is the most popular meat protein.

More than 60% of red meat consumption occurs during dinner.

Meals with beef typically include mince and bread for a burger, or steak and veggies. **Meals with lamb are more likely to include chops** or a roast with carrots and baked potato.
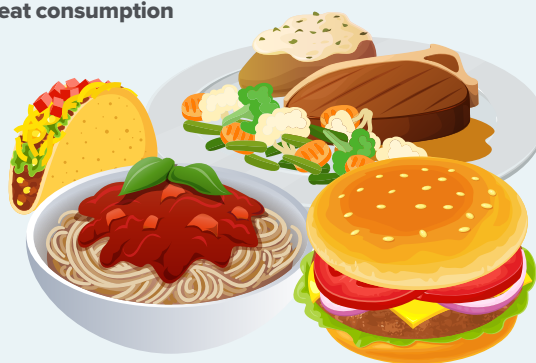
While convenience is a key driver across meals and snacks, red meat is also associated with being a comforting food on many occasions. The **popularity of beef mince is also driven strongly by its versatility and ease-of-use** in a range of different meals.

Emotional eating increases as the week (or day) progresses

Functional drivers of food choice are higher at the start of the week, when consumers are motivated to choose meals which are healthy, energising and relatively simple to prepare.

Towards Friday, Saturday and Sunday, emotional drivers are stronger. Many will choose food to:

- fulfil an indulgence or reward
- feel enjoyment or fun
- connect with friends or loved ones
- eat something different or special.

Red meat-centric meals consumed on the weekend are still typically eaten during dinner (66%) with only a third eaten at lunch.

A similar pattern emerges as the day progresses – **functional drivers are very prominent early in the day** whereas emotional-focused drivers are more prevalent in the latter half of the day.

As such, providing red meat options to meet each motivation – whether functional or emotional – is critical to expanding sales and markets.

MONDAY   **FRIDAY**
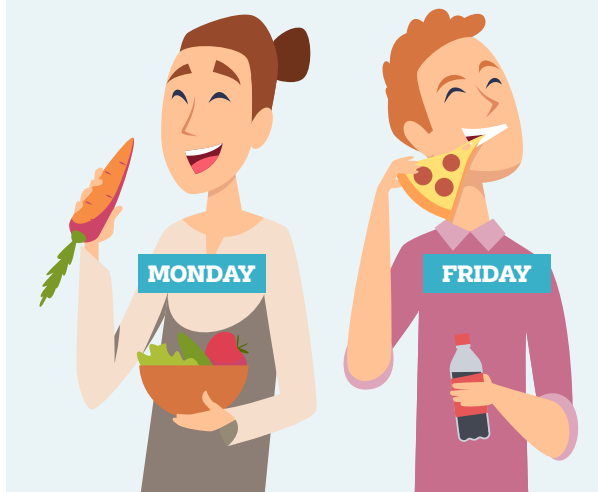
How to use this information

For producers and brand owners who are seeking opportunities to expand their knowledge of consumer consumption habits of red meat, the CPL insights provide a deeper understanding of why certain proteins are chosen across different meals.

Understanding the drivers of choice and consumers' relationship with red meat, underpinned with their needs and motivations, provides the opportunity for differentiation and expansion of red meat solutions into other occasions, including breakfast, snacks and beyond. ■

ⓘ
- Consumer Protein Landscape **mla.com.au/cpl**
- **australianbeef.com.au** **australianlamb.com.au**
- Australian Good Meat **goodmeat.com.au**
- Andrew Price **aprice@mla.com.au**
- Myla Santos **msantos@mla.com.au**

Meaty facts for healthy eating

MLA's nutrition program develops resources which make it easy for consumers to enjoy Australian red meat in three to four balanced meals a week, in line with the *Australian Dietary Guidelines*.

One of MLA's latest reports, *Nutritional benefits of Australian red meat*, provides guidance on the nutritional value of Australian beef, veal, lamb, mutton and goatmeat, including serving size, level of trim and different types of cuts.

The data and insights in the report were derived from a review which considered the influence of a range of factors including:

- nutrient content of red meat available for purchase
- consumer consumption habits
- Australian production practices.

The information in the report helps health professionals and food industry stakeholders to inform consumers' choices, consistent with *Australian Dietary Guidelines* and food regulations.

Here's what three to four balanced meals a week looks like on the plate

Portion size: average 150g (raw weight), ranging from 100–200g

Steak ~200–250g

Popular cuts: lean cuts, trimmed of fat, including lean mince, steaks, chops, roasts, diced, strips, slow-cooked cuts

Beef strips ~150g

Diced lamb ~150g

Key nutrients: excellent source of bioavailable iron and zinc, high quality protein, vitamin B12 and a source of omega-3

Lean mince (1/4 of 500g packet) ~125g

Frequency: three to four balanced meals a week, equivalent to 650g (raw weight) or 455g (cooked weight) per week, as recommended in the *Australian Dietary Guidelines*

TOOLBOX

- Scan this QR code to read *Nutritional benefits of Australian red meat.*
- View practical resources to help people enjoy red meat in balanced meals: **mlahealthymeals.com.au**
- For more information about amounts and types of foods for health visit **eatforhealth.gov.au**

ⓘ   ✉ Louise Capling **lcapling@mla.com.au**

Lemongrass and tamarind beef stir fry

Welcome spring with this zesty spin on a family favourite. Discover more ways to cook beef at **australianbeef.com.au**

Serves ✂ **4**   Prep time 🔪 **10 minutes**   Cooking time ⏱ **15 minutes**

INGREDIENTS

500g rump stir fry strips

180g udon noodles

2 stems lemongrass, white part only, finely chopped, extra to serve

1/2 small wombok, shredded

1 bunch baby bok choy, quartered

1/3 cup (80ml) tamarind puree

1/3 cup (80ml) beef stock

30g palm sugar, grated

Pickled ginger, red chilli slices, coriander and edamame to serve

METHOD

1. Cook the noodles in a saucepan following packet directions, drain well and set aside. Heat a non-stick wok or frying pan over high heat. Add the beef and cook in batches, stirring for 2–3 minutes until browned. Transfer to a clean plate.

2. Add the wombok, bok choy, lemongrass, tamarind, stock and sugar to the wok. Toss to combine, stir fry for 2–3 minutes. Return noodles and beef with any juices to noodle mixture, toss to combine and cook for 2 minutes until heated through.

3. Divide noodle mixture amongst serving bowls. Top with ginger, chilli, coriander and edamame. Serve.

TIPS

- Thinly sliced beef sirloin or scotch can also be used in this recipe.
- Swap palm sugar for brown sugar. Swap fresh lemongrass for lemongrass paste.
- Udon noodles can be swapped out for a gluten-free noodle option.
- Refrigerate any leftovers in a sealed container for lunch the next day.