

FEEDBACK

MLA – FOSTERING PROSPERITY

WINTER 2022



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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 39): MLA Managing Director Jason Strong, NSW lamb producers Hamish Dickson and Isabele Roberts and Gundagai Meat Processors (GMP) Chief Executive Officer Will Barton during a tour of new lamb processing technologies at GMP.

Have your say!

We'd love to hear from you.

✉ info@mla.com.au

☎ 02 9463 9333

🌐 mla.com.au

📘 @meatandlivestockaustralia

🐦 @meatlivestock

📺 [meatandlivestock](https://www.youtube.com/meatandlivestock)

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A note from the MD

Welcome to the winter edition of *Feedback* magazine, which takes a look through the gates of innovative red meat businesses around the country.



From Gundagai Meat Processors in NSW, with its world-leading objective measurement technologies for lamb, through to a WA pastoral station which is harnessing the opportunity of virtual fencing technology – these businesses are adopting the outcomes of MLA-supported research and development to drive productivity.

Seasonal resources

This edition also highlights seasonal strategies to set herds, flocks and the feedbase up for success through winter and into spring.

Weather events across the nation have brought challenges to operations across Australia, with road closures and loss of livestock and crops causing major delays to the supply chain and devastation to many producers. Being prepared has never been more important – see page 20 for strategies to be on the front foot for transporting livestock in wild weather.

On-farm, weeds can impact productivity and profitability, in some cases by affecting the quality of pastures or causing toxicity issues with livestock. Preventing and controlling weeds is key to the cost-effective, long-term maintenance of land condition, which helps create a productive feedbase. Check out page 28 for pasture weed management in the south, and page 36 for tips to manage parkinsonia in the north.

MLA's strategic partnerships are focused on delivering impactful research to stakeholders. As part of our Northern Breeding Business (NB2) program, new Calf Alive research on page 8 outlines nutritional and management strategies for breeders to improve calf survival and underpin productivity and profitability of northern beef businesses.

Another strategic partnership, BeefLinks, is exploring the potential of virtual fencing technology to contain and move livestock without using physical fences. It aims to help resource utilisation and improve rangeland health using invisible boundaries, satellite co-ordinates, GPS cattle collars, onsite telemetry towers and an app to monitor livestock movement. Read more on page 30.

Processing innovations

It has been good to be able to travel more this year, attending special events and reconnecting with stakeholders across the supply chain.

I recently attended an event at Gundagai Meat Processors which showcased world-leading objective measurement technologies for lamb. This technology, created in

partnership with MLA, underpins the objective measurement, sortation and future grading of lamb carcasses under Meat Standards Australia's (MSA) new cuts-based model – turn to page 39 to see the benefits, from paddock to plate.

As an industry we are not far off MSA grading for lamb, much like we already do in beef. These technologies enable the development of value-based payment systems based on eating quality, leanness and other attributes desired by consumers – it is progress towards our industry objective to double the value of Australian red meat sales.

Producers who have outstanding compliance rates to MSA minimum requirements are recognised biennially at MSA's Excellence in Eating Quality awards. With COVID travel restrictions lifted we were finally able to host these awards face-to-face across six states, providing a forum for stakeholders to come together and celebrate the impressive work completed over the last two years – meet the winners on page 16.

Global perspective

In March, I attended the International Livestock Congress in Houston, Texas. This is a significant event where attendees from around the world hear from industry leaders about the challenges and opportunities of supplying sustainable and high-quality protein to global populations.

A key focus at the event was on regenerative agriculture and sustainable production in the industry in different parts of the world. It was great to put Australia on this world stage to see how progressive we are – we are leaders in research in sustainability and traceability, which provides opportunities to collaborate internationally. This enables MLA to provide more information and feedback to our stakeholders.

There were many valuable takeaways from this event, and although we are leaders, we still have plenty of work to do to ensure we help double the value of Australian red meat sales and become the trusted source of the highest quality protein. We are approaching the halfway point in our five-year *Strategic Plan* journey on the path to reaching these ambitious goals, and I encourage you to play your part in helping our industry achieve them. ■

• Have a question for me?

• Jason Strong MLA Managing Director

• ✉ jstrong@mla.com.au

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Aussie sheepmeat on top of world

The 2021 *Global agribenchmark report for sheepmeat* has been released – one of the key findings is that Australian sheepmeat producers are among the most profitable in the world. It provides an analysis of the performance of Australian sheepmeat producers against 55% of the global sheep flock as well as the

performance of other farms. This year's report identifies Australian sheepmeat producers as some of the most efficient and diversified in the world, with costs of production well below the global average.

Scan this QR code to access the 2021 report.



New beetle rolls in

The third and final dung beetle species imported to Australia as part of the Dung Beetle Ecosystem Engineer project is finally here.

The MLA-supported Dung Beetle Ecosystem Engineer (DBEE) project recently reached a major milestone with the arrival of a new dung beetle species, *Gymnopleurus sturmi*, on Australian shores.

Originally expected to arrive in Australia in 2021, the *G. sturmi* beetles have been biding their time in CSIRO's lab in France due to COVID-19-related delays.

Scan this QR code to learn more about how the *G. sturmi* dung beetles differ from the other two species Australia has already imported through DBEE, and what it means for red meat producers.



G. sturmi dung beetles. Image credit: Alberto Zamprogna, CSIRO European laboratory

Improved market reports

The National Livestock Reporting Service (NLRS) has replaced all market report PDFs with easy-to-use online reports, making it easier to access market information on your mobile phone or tablet.

This means all sheep and cattle market reports are now available as interactive online reports rather than PDF documents.

Existing subscribers and readers of NLRS reports will continue to be emailed when the market information is available, and all existing NLRS subscribers will have the same access they presently have.

There has been no reduction in the range and coverage of livestock market prices.

An audio recording of the market commentary is now available, making the reports even more accessible.



Access the latest reports at mla.com.au/prices-markets



Goatmeat on a roll

MLA's *Global Goatmeat Snapshot for 2022* has been released, outlining supply and demand within the Australian goatmeat market.

It contains a detailed overview of market dynamics during 2021, including the evolution of domestic goat production and supply volumes, slaughter numbers, prices over-the-hooks and export volumes and values.

The snapshot also provides a comprehensive analysis of top Australian goatmeat markets, with updated insights on factors underpinning demand and future opportunities from emerging consumer trends.

Highlights include:

- Australian goat production has rebounded after several years of adverse environmental conditions impacting supply volumes.
- Sustained favourable conditions since 2020 have triggered an expansion in the flock size, flowing on to increased production.
- The rise in production reflects an increase in the number of animals as well as heavier animals, resulting in heavier carcass weights.

Scan this QR code to access the full snapshot.





▶ Chef Guy Turland, pictured with fitness and lifestyle influencer and Bachelorette contestant, Elly Miles, at the Greatest Butcher on Your Block campaign launch.

Butchers help dish up quick, delicious meals

MLA's Greatest Butcher on Your Block has wrapped up for another year.

More than 800 butcher shops participated in the campaign, which highlighted the versatility of beef and lamb, with easy and quick recipes to bring a world of flavour to mealtimes in under 30 minutes.

The campaign kicked off with an interactive event at Vive Cooking School in Sydney, hosted by chef Guy Turland and attended by foodies, chefs, and parenting, fitness and lifestyle influencers.

MLA's corporate butcher Doug Piper was on hand to deliver a butchery masterclass, followed by a Greatest Butcher Mystery Box Challenge.

Guests were given a surprise cut of Australian beef or lamb and had 30 minutes to create a healthy, balanced meal. The attendees shared their dishes on their social media channels and tagged @australianbeef and @australianlamb to generate awareness of the campaign.

This activity aimed to drive awareness of 30 minute meals using beef and lamb and specifically targeted a younger demographic or consumer whose first choice isn't always beef or lamb.

It was just one element of the nationwide campaign that included an in-store promotion giving away an ultimate trip to Uluru and 100 Phillips Airfryers. ■

📌 If you've ever wondered how to cook red meat in an airfryer, scan this QR code to access how-to videos for a range of beef and lamb cuts.



📌 Turn to page 45 for a delicious recipe to get on the table in under half an hour – find more red meat recipes at australianbeef.com.au and australianlamb.com.au

Cattle Australia focuses on producer-led issues

Environmental sustainability, biosecurity and costs of production – these are just some of the areas grassfed cattle producers want Cattle Australia to focus on when it launches in July.

This was the feedback received during the recent consultation period for Cattle Australia, which is the new national peak body for the grassfed cattle industry.

The consultation process, which invited producers and industry stakeholders to have their say on what Cattle Australia's national focus areas should be, resulted in a strong level of interest in the new entity.

More than 200 submissions and correspondence were submitted to Cattle Australia for consideration and close to 500 levy payers registered to receive regular updates on the proposed peak body for the grassfed cattle sector.

Andrew Macaulay, Independent Chair of the Restructure Steering Committee, said the Committee was pleased with the results of the consultation period.

"The Restructure Steering Committee conducted numerous engagement activities, such as webinars, a nationwide advertising campaign in print and digital media, regular stakeholder briefing sessions and attendance at relevant events to support industry participation and engagement in the consultation process," Andrew said.

"To get such a strong level of interest in Cattle Australia as a result is a great outcome."

Using industry feedback

Andrew said the feedback received has not only provided valuable intel for the



▶ Andrew Macaulay, Independent Chair of the Restructure Steering Committee for Cattle Australia.

Restructure Steering Committee on what Cattle Australia's work priorities should be, but also reinforced the need for Cattle Australia, an organisation committed to providing

a visible, unified, and influential voice for producers and clear leadership and direction for the broader grassfed cattle industry.

"Producers have told us that they want a peak body that offers inclusion, producer representation, and strong industry advocacy. This is what Cattle Australia has set out from the get-go to deliver, so it's reassuring to know that we are on the right track."

Submissions received during the public consultation and stakeholder engagement process are being used by the Restructure Steering Committee to inform discussions on Cattle Australia's organisational design, priorities, and funding model.

They will also guide the Restructure Steering Committee as it directs its attention to drafting the constitution, securing medium-term funding, and creating a database in collaboration with MLA and other industry groups to help facilitate democratic elections.

Transition process

With the intended launch of Cattle Australia rapidly approaching, the Restructure Steering Committee is also focusing on what the transition process will look like for the transfer of Cattle Council of Australia's (CCA) responsibilities to Cattle Australia.

The Restructure Steering Committee have identified a phased approach which means a Board transition process will be required between CCA and Cattle Australia post-1 July to allow time for the election process to be fully developed and implemented. Discussions with CCA on this process are ongoing.

Andrew acknowledged those who have participated in the consultation process.

"Your input is invaluable and will help us create an organisation that can achieve its mission of being the voice of grassfed cattle producers, leading the cattle industry to a stronger, more sustainable future." ■



Find out more at cattleaustralia.com.au



Cattle Australia info@cattleaustralia.com.au

Improved genetics at your fingertips

The Sheep Genetics database has been further improved by combining three databases to create a state-of-the-art data platform for storing and reporting genetic information, including breeding values.

Australian ram buyers have access to Australian Sheep Breeding Values (ASBVs) to make decisions that drive genetic progress in their flocks. These ASBVs are derived from a world-leading genetic evaluation system.

Over the past three years, MLA has reviewed and improved the Sheep Genetics database system.

Sheep Genetics and MLA manage, fund or interact with multiple databases which contain sheep pedigree, data and genotypes across a variety of breeds in Australia.

Manager of Sheep Genetics, Peta Bradley, said Sheep Genetics databases are an integral part to delivering breeding values to industry.

Following increasing rates of genotyping and more flocks than ever before submitting data to Sheep Genetics, the need to update one of the industry's key databases was important.

"The evolution of database technology, the growing number of animals with ASBVs and growth of genomic information were key reasons for undertaking a database redevelopment," Peta said.

"It was also important to create a system that was more serviceable and flexible."

Changes to the database

The updated database offers improved features for stud and commercial breeders, but its benefits will translate to the whole industry.

During the redevelopment, three initially separate databases, MERINOSELECT, LAMBPLAN and Resource Flock, were

combined in a single data warehouse.

This single database reduces business risk, increases serviceability and allows data sources to be easily combined.

"For ram breeders, this single data warehouse will make it easier to input their on-farm data. They will also have more autonomy over their data and it will allow more flexible data capture for new and emerging traits," Peta said.

The new Sheep Genetics database will make it simpler for breeders to more easily retrieve and interact with their results through a streamlined reporting process.

In addition, the updated Sheep Genetics database has been transferred to a platform that will allow it to be integrated with other industry databases, such as the National Livestock Identification System (NLIS).

Benefits to industry

Having a streamlined, more integrated Sheep Genetics database provides many benefits for stud and commercial breeders, as well as the broader industry.

Peta said users won't be limited by infrastructure as with previous versions.

"The new database will allow us to develop new genetic products for commercial breeders, as well as provide easier access to the latest ASBVs.

"It also allows for integration with other industry and commercial data which benefits industry, and the utilisation and flexibility of data capture means there are more datasets available for a greater variety of needs." ■

How does the Sheep Genetics database work?



Information gathered from ram genomics



Information is analysed through the Sheep Genetics database



Reports are generated and are available to share back with industry

Visit sheepgenetics.com.au for more information.

Sheep producers who want to harness the genetic power of breeding values can access how-to guides, videos and case studies at MLA's Genetics Hub: genetics.mla.com.au

Peta Bradley pbradley@mla.com.au



ON FARM

RESEARCH IN ACTION

Seasonal action plan

Northern

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Identify paddocks where wet season spelling can improve productivity

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Prioritise breeder nutrition to increase calf survival

Southern

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Take a paddock health check to set your feedbase up for spring

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Keep on top of weeds through winter for productive perennial pastures

✔ Northern cattle in the wet season.

Dry season strategies to get set for the wet

For producers in the northern rangelands, there's no better time than the second half of the dry season to put in place feedbase and herd management strategies which will maximise production into the wet season and beyond.

MLA's Northern Breeding Business (NB2) feedbase lead and Managing Director of Range IQ, Dionne Walsh, said making decisions now around managing the feedbase and stocking rates is crucial for producers wanting to get set for a productive year ahead.

Let it rest

One important decision producers need to make as the dry season draws to a close is around how wet season spelling of paddocks could help improve productivity in following seasons.

"Pasture spelling is most effective over the growing season – that's when your pastures can actually respond to a period free of grazing," Dionne said.

"Spelling over the wet season is a good strategy to improve land condition, and it's also ideal for producers who may want to build up a large body of feed that they'll then be able to use during the next year."

She said timing the spelling of paddocks is especially important to get the most out of pastures.

"It can be tricky to decide when to take cattle out of a paddock to get ready for a wet season spell – on very large properties, this decision often comes down to when it is most practical to empty a paddock.

"Sometimes this means you need to destock a paddock earlier than you would ideally like, but in other cases you may be able to delay destocking so you can use the available feed right up to the wet season."

Restocking of paddocks after spelling also needs to be planned strategically to maximise the pasture response. Options include:

- spell the paddock for the first part of the growing season, which is the most crucial time for getting a good pasture response, or
- leave it completely destocked for the entire wet season to allow pastures to set seed and put livestock back in next year as part of the normal first-round muster.

Be strategic with supply

At this point in the dry season, Dionne said it's vital producers also begin to consider how they would manage paddocks to meet the nutritional needs of breeders during late pregnancy and lactation.

"Many producers now conduct pregnancy diagnosis and foetal aging to segregate cohorts of breeders into tighter calving groups," Dionne said.

"Now's the time when you should think about where you're going to put pregnant breeders so they'll have good nutrition through that really demanding time of late pregnancy and lactation."



MLA's Northern Breeding Business (NB2) feedbase lead and Managing Director of Range IQ, Dionne Walsh.

"Spelling over the wet season is a good strategy to improve land condition, and it's also ideal for producers who may want to build up a large body of feed that they'll then be able to use during the next year."

“A bumper season is a great opportunity to lift land condition and optimise live weight production – and planning your wet season strategies ahead of time ensures you can capitalise on these opportunities.”

Allocating productive paddocks that have been spelled to pregnant heifers is one approach Dionne endorses to ensure these young breeders – and their progeny – have a strong feed supply into the wet.

“Young breeders have very high nutritional demands because they’re growing at the same time as they’re pregnant and lactating,” Dionne said.

“Some producers keep good quality paddocks aside to put this important cohort into ahead of calving. This way, they know they will have enough feed to carry them right through until there’s a good body of new green feed coming on once they’re lactating.”

Taking stock

The mid to late dry season is also a key time to make decisions around how stocking rates should be adjusted to maintain sufficient feed supply through to the wet season and beyond.

“Around this time, producers should be doing another check of their paddocks just to see how their feed supply is travelling and whether they are going to have enough good quality feed to last them through to their next production point date,” Dionne said.

“You may need to adjust your forage budget in case there’s been any dramatic change in any of your paddocks due to unexpected events such as spoiling rain, a grasshopper outbreak or a bushfire.

“If the pasture quality or amount has declined unexpectedly, you might need to reduce your stocking rates in a paddock or see if you have spare capacity elsewhere, so the feed supply doesn’t reach critical levels prior to the wet season.”

Dionne said maintaining an adequate feed supply is also essential to ensure pastures

can respond effectively to wet season rain and remain productive for seasons to come.

“You don’t want perennial grass tussocks to be grazed down to ground level, because it damages their growing points and makes it really hard for them to respond to early wet season rainfall,” Dionne said.

“To retain a healthy perennial grass tussock, you shouldn’t graze these grasses any lower than 10–15cm in height.

“This will also ensure you can retain good groundcover coming into the wet season to avoid runoff and erosion, which can have a long-term effect on your pastures and soils.”

Predictions for planning

These management decisions should be made with the forecast seasonal conditions always in mind to ensure the most profitable outcomes.

For northern producers, this hinges on keeping a close eye later in the year on the predicted wet season onset.

“If it looks like the wet season will have a late onset, then you might have to make some decisions earlier about lightening off some paddocks or changing your plans for wet season spelling if you’re worried that the feed supply is going to be tight at the end of the year,” Dionne said.

“Alternatively, if there’s strong indications that the wet season is going to start early or they’re predicting an above-average rainfall season, you might have more confidence to set aside paddocks for a wet season spell.

“A bumper season is a great opportunity to lift land condition and optimise live weight production – and planning your wet season strategies ahead of time ensures you can capitalise on these opportunities.” ■

SEASONAL ACTION PLAN

📌 **Get the most out of your feedbase** by attending one of MLA’s Grazing Fundamentals or Grazing Land Management EDGE workshops: mla.com.au/edge-network

📌 **Prepare a forage budget and benchmark land condition** to inform stocking rate and spelling decisions with this NB2 template. Scan the QR code to access.



📌 **Learn how the latest technology can streamline forage budgeting** through Satellite Assisted Forage Budgeting training – visit mla.com.au/pgs

📌 Scan this QR code to **watch FutureBeef’s short guide to wet season spelling** for more information on spelling paddocks during this coming wet season.



📌 Keep an eye on longpaddock.qld.gov.au for the latest climate and pasture condition information for Queensland as the wet season approaches.

✔ The late dry season is the perfect time to map out how you can get the most out of your feedbase through the wet season and beyond.



🔗 Wet season spelling can improve land condition and boost feed available for the coming year.

📌 For more information on the NB2 program visit mla.com.au/nb2, contact Harriet Bawden hbawden@mla.com.au or Steve Banney steve.banney@bigpond.com. 📧 Dionne Walsh dionne@rangeiq.com.au

Lifting calf survival, together

Improving survival rates for cows and calves has the potential to transform the northern beef industry – and a new MLA-funded initiative is trialling practical solutions producers need to reduce losses and drive profitability.

Established as part of MLA's Northern Breeding Business (NB2) program, the Calf Alive project is trialling a range of management strategies to lift calf survival and minimise herd mortality across 10 beef properties in northern Australia. Participating properties are based in the northern forest areas of the NT, as well as the northern downs and central, northern and southern forest areas of Queensland.

Calf loss costs

According to research lead, University of Queensland Associate Professor Luis Prada e Silva, the current impacts of high mortality rates in northern herds are substantial, with poor nutrition and environmental stress during calving the key drivers of calf mortality and calving difficulty.

"The average mortality rate can exceed 15% in the northern forest areas of Australia – that's too high from an economic and animal welfare perspective," he said.

"Newborn calf mortality alone is likely to be costing northern Australian beef businesses more than \$54 million annually.

"The main cause of the problem is a lack of good nutrition around calving, because cows reach the last stage of their gestational period during the dry season when pastures are very low quality or unavailable.

"Heat stress and the environment also impacts cow and calf mortality."

Finding the solution

The project will address these key drivers of reproductive loss by trialling interventions on-property to target poor nutrition and environmental stress during calving.

"This includes trialling interventions to

increase nutrition, such as giving out a protein supplement for a few months around calving or having a paddock that has been spelled during the wet with better pasture and legumes for this critical period," Luis said.

To understand how these strategies alleviate environmental stress and poor nutrition, the trial will use GPS tags, rumen boluses and weather stations to monitor temperature and movement of animals, as well as calf mortality rates.

Survive to thrive

By identifying the most effective strategies for lifting herd survival, the project will equip producers with the tools they need to send productivity in the right direction – upwards.

"This project will be a key contributor to the aims of the overall NB2 program, with the target of reducing calf mortality by 5% and reducing the overall mortality of herds by 1%," Luis said.

"It's not every day you have a project of this size and duration – we have enough resources and people on board to identify and validate some really effective solutions which will increase productivity in northern herds."

CQUniversity's Professor Mark Trotter, who is assisting with the research, agrees the partnerships formed as part of the project will ensure Calf Alive will deliver real impact for producers.

"CQUniversity brings a range of different skills to the table but our real strength is in the development and application of sensor technology in real-world grazing landscapes," Mark said.

"We'll use this technology to collect information that would otherwise be impossible to get on commercial



Research lead and University of Queensland Associate Professor, Luis Prada e Silva.

properties, including detecting the animals' behaviour in relation to heat stress and to nutritional interventions.

"Partnerships like ours that have been formed as part of the project not only take research out of the laboratory and onto properties, but ensure a diversity of skills and technologies are used to get the best results for producers."

Spelling for success

For producers looking to reduce calf losses now, Luis said having sound pasture management strategies, such as wet season spelling, is an effective strategy.

"Having a paddock with sufficient feed available during the last three months of pregnancy is critical to maintain reproduction and calf survival," Luis said.

"If you don't have protein available during this period, the animals cannot produce milk in a timely manner – so setting paddocks aside to ensure you can provide cows with the nutrients they need around calving is essential." ■

» Learn more about wet season spelling and other seasonal feedbase management strategies on page 6.



- Find out more about the NB2 program and Calf Alive project at mla.om.au/nb2
- Access practical tips and tools to identify and turn-around reproductive loss at mla.com.au/reproperf

- Luis Prada e Silva l.pradaesilva@uq.edu.au
- Tony Parker tparker@mla.com.au
- Harriet Bawden hbawden@mla.com.au
- Steve Banney steve.banney@bigpond.com

Every calf counts

Achieving exceptional reproductive rates is the aim of the game for Queensland stud and commercial beef business, Valera Vale Droughtmasters.

With a 10,000-head herd spread across properties in south-east and south-west Queensland, stud principal Michael Flynn said increasing reproductive efficiency was a core focus for their business.

This is founded on the Droughtmaster breed's reputation for survivability and reproductive efficiency.

"Selecting our cattle for the best reproductive performance, as well as trying to manage the environment as best we can, are both things we do to keep calf loss to between 5–10% from pregnancy testing to weaning, and pregnancy rates to between 90–92%," he said.

In recent times, Michael has also implemented semen morphology testing on Valera Vale's bulls to drive continued improvements in productivity within the stud and commercial herds.

"Morphology testing bulls can get us a couple of percent better pregnancy rates than what we used to think was possible, year in year out," Michael said.

"That just gives us that little edge in productivity."

New possibilities for productivity

As a cattle vet, Michael has a solid understanding of typical cow and calf mortality rates seen on northern beef properties.

However, after finding out about the research to be conducted as part of the Northern Breeding Business (NB2) Calf Alive project (see story opposite), he's participating in the trials in the hope of finding further solutions to reduce calf mortality.



Michael Flynn of Valera Vale Droughtmasters.

Michael believes Calf Alive will deliver real outcomes for northern beef producers.

"Calf loss is very multifactorial – calf loss of between 5–10% from pregnancy testing to weaning is largely accepted by cattle vets as typical, and we thought pregnancy rates of 90–92% were what you could expect," Michael said.

"The research team have come up with cutting edge ideas around nutritional stress and its links to neonatal¹ calf loss, which we didn't identify before and so we weren't doing anything towards changing – in fact, we calve late in the dry season when nutrition is at its lowest level."

When cattle aren't nutritionally stressed, they lactate quickly which is vital for calf survival, so Michael has his sights set on minimising nutritional stress around the time of calving.

"This really is a revelation that maybe we can do something about it, cost-effectively, and if we can develop an economical way of changing the situation nutritionally it could have a big effect on productivity in the north."

Strategies for survival

While Calf Alive's trials are yet to kick off, Michael said there's still plenty producers in the north can do coming into the end of the dry season to minimise cow and calf mortality rates.

"A lot of northern producers are already doing this, but I'd suggest producers should try to split breeders up into calving groups wherever possible based on their calving date," Michael said.

"This will help ensure breeders can be managed so they have access to the best feed or the most supplementation for when they're calving, and if they're not calving at that time, they can be put in other paddocks.

"Whatever percentage calf loss you have,

SNAPSHOT



MICHAEL FLYNN,
Augathella, Charleville,
Milbong, Munbilla and
Mt Mort, Queensland



AREA

45,000ha across 'Valera Vale',
Augathella and 'Yanna', Charleville

ENTERPRISE

Droughtmaster stud and
commercial herds

LIVESTOCK

Approximately 10,000 head

PASTURES

Buffel and Mulga

RAINFALL

Variable across properties

SEASONAL ACTION PLAN

Scan this QR code to watch a video featuring Michael for more information on using breeder segregation and foetal ageing to improve reproductive rates.



Implement changes now to reduce losses in the next drop of calves, with MLA's calf survival checklist and Tips and Tools guide to address reproductive loss: mla.com.au/calf-survival-checklist and mla.com.au/improve-reproductive-performance

Prepare your phosphorus supplementation plan ahead of the wet season to ensure breeders have adequate nutrition through late pregnancy and lactation: mla.com.au/phosphorus

Attend an MLA Nutrition EDGE workshop to find out more about nutritional strategies for optimal reproduction: mla.com.au/edge-network

it's a big burden – it adds that percentage more bulls, more vaccines and more direct costs on to your operation.

"If you can reduce calf loss, you could brand the same number of calves with 5% less cows and that itself solves some of the nutritional problems." ■

¹Less than 28 days old.



Michael Flynn is drawing on the Calf Alive research to improve calf survival in his Droughtmaster herd.

Four ways to grow more dollars

While vitally important, the length of the growing season, temperature and moisture are not things a producer can control – but there are two feedbase factors which can be influenced.

Green leaf area and soil fertility are in your control, and adjusting management strategies can maximise productivity, increase utilisation and maintain good pasture condition to deliver improved animal performance.

This is the timely message from SA farm consultant Tim Prance, who developed MLA's Gra\$\$ to Dollars program, which is based on the highly successful Prograze® course.

Here are Tim's top strategies for producing more profitable, productive pastures.

1 Assess pasture health

The first step is to assess pasture health, and Tim recommends MLA's Pasture Paramedic tool, which can be used when the pasture is green or dry.

"It allows you to put some objective figures on the proportion of desirable perennial grasses, improved clovers and dominant weeds," Tim said.

"From there, you can take some appropriate action to improve the content of the perennial grasses and clovers."

Plan ahead for next year, as Tim recommends this process begins in autumn.

"In autumn, usually nothing else has germinated, so you can assess the perennial grass content.

"After applying Pasture Paramedic, you can take action before the opening rains, or start preparation for a complete pasture renovation."

Winter is also a critical time to take a pasture health check.

Another Pasture Paramedic assessment in winter allows producers to assess the proportion of clover plus weeds in the paddock, then put in place

management strategies, which may involve herbicides or grazing.

One herbicide option is spray-grazing using a low rate of herbicide. This involves applying certain herbicides at a sub-lethal rate along with heavy grazing pressure to consume broadleaf weeds in pastures. Damage to pastures, including legumes, is minimal at these low rates.

» Turn to page 29 for more information on Pasture Paramedic.

2 Adjust grazing management

As one of the biggest pasture productivity drivers, kg/ha of green leaf reflects ground cover as well as the height, which is controlled through grazing management. The density of perennials reflects how well the pasture has been managed in autumn.

"Your key goal is deferred grazing, or building a feed wedge," Tim said.

"Keep stock off pastures until you have a minimum 800kg, but up to 1,200kg of biomass (DM/ha)."

He said deferring grazing until there is 1,200kg/ha feed on offer helps minimise animal health issues.

"Almost all health issues are related to insufficient feed or too much feed, and you're not going to have too much feed at that time of year."

Tim recommends giving animals time to adjust to the green feed. If they've been on dry feed and supplemented with grain, allow 2–3 weeks for rumen microbes to adjust to the new regime.

"The best way to do this is to feed hay," he said.

"Deferred grazing usually involves leaving animals in a sacrifice paddock until your paddocks have 800–1,200kg/ha of feed on offer."



SA farm consultant Tim Prance.

"Feed them hay in the sacrifice paddock and keep feeding them the same hay when you introduce them into the green paddocks, then remove the hay after 2–3 weeks. Make sure you're up to date with clostridial vaccinations (5-in-1) and drenching."

3 Manage for reproductive performance

For operations with autumn calving or lambing, the feed on offer will have a significant impact on lactation performance.

Abundant feed will help to increase milk production and offspring will grow faster.

Conversely, in operations with later lambing or calving, Tim said it's important to prevent breeding stock from gaining too much weight.

"With pregnant animals, the goal is to have sufficient feed on offer for when they are calving or lambing."

Target 1,400–1,600kg/ha, and more for ewes carrying multiples.

"Your objective should still be to build a feed wedge but – depending on the time of lambing or calving – you have more time to get the feed up

"N is a good way of getting extra feed in winter, but it's currently quite expensive, so timing, paddock selection and grazing management must be right to obtain an economic response."

to 1,400–1,600kg/ha. You may be able to do that with a slow rotation: shifting animals every 30 days.”

4 Boost soil fertility

Early winter is a good target to have soil testing results back so the required nutrients – phosphorus (P), sulphur (S) and potash (K) – can be applied to optimise winter pasture productivity.

Tim recommends MLA’s Phosphorus Tool to support producers in their P decisions.

If pasture production is lagging, consider applying nitrogen (N) fertiliser or gibberellic acid (a plant growth regulator), or both.

“N is a good way of getting extra feed in winter, but it’s currently quite expensive, so timing, paddock selection and grazing management must be right to obtain an economic response,” he said.

“Gibberellic acid is a cheaper option, although it provides only a short-term ‘quick fix’ response compared to fertiliser.”

However, Tim cautions producers won’t see an economic response to either N or gibberellic acid if soil P, K or S levels and/or soil pH levels are not optimal, so fix these first. ■

» Turn the page to see how SA producers, the Arthurs, are managing their feedbase.



What is PGS?

Gra\$\$ to Dollars is part of MLA’s Profitable Grazing Systems (PGS) program. PGS is designed to achieve practice change on-farm in the areas of people, business, reproduction and genetics, value chain and feedbase.

Practical coaching sessions are delivered primarily on-farm to small producer groups over several months to improve skills and knowledge. Deliverers share their knowledge, skills and experience to help participants implement new practices to better their businesses and bottom line.

Want to get involved?

MLA offers more than 20 different PGS-supported learning packages, covering regionally-relevant production topics.

Contact your PGS state coordinator by emailing pgs@mla.com.au or visiting mla.com.au/pgs



SEASONAL ACTION PLAN

! **Ensure good soil fertility by using decision support resources** such as MLA’s Phosphorus tool: mla.com.au/phosphorustool

! **Conduct a pasture health check** using MLA’s Pasture Paramedic tool: mla.com.au/pastureparamedic

! **Use deferred grazing to create a feed wedge** – tools such as MLA’s Feed Demand Calculator can help close feed gaps: mla.com.au/feeddemand

! **Work towards having well-fertilised, dense pastures** – MLA’s Persistent Pastures hub has fact sheets and videos mla.com.au/persistent-pastures

! **Access tips and tools to get weeds under control** with MLA’s weed resource hub: mla.com.au/weeds



Learn more about MLA’s Profitable Grazing Systems program, including Gra\$\$ to Dollars: mla.com.au/pgs

Tim Prance t.prance@prance.net.au Andrew Morelli amorelli@mla.com.au Elizabeth Thelander ethelander@mla.com.au

» Bradley and Bronwyn Arthur with their sons Giles and Hayden.

Matching flexibility, feed and fertility

The Arthur family face unique challenges in managing the feedbase across their 500ha cattle business on SA's Fleurieu Peninsula, so adaptability is a guiding principle.

Bradley and Bronwyn Arthur farm with their sons Giles and Hayden, running a self-replacing Angus breeding herd on owned, leased and agisted land.

Their home block is divided into small paddocks – reflecting its former use as a dairy farm – while their leased country presents constraints around management and inputs.

“We don't have a locked-in plan – we're flexible,” Bradley said.

“Our production management revolves around our stocking rate and matching that to our available pasture.”

The Arthurs operate an autumn calving, with 180 breeders across all blocks of land.

“Once we get into spring, we move weaners off their mothers and market them around Christmas. Then over summer, when feed is scarcest, we have the lowest animal numbers.”

On the home block, which has some irrigated paddocks, Bradley has retained the original small paddocks (averaging 3ha) and their existing white clover–kikuyu pastures.

He's augmented these by sowing in annual and perennial ryegrass to provide feed over the winter when the kikuyu dies off.

On some non-irrigated pastures, he direct seeds annual ryegrass in autumn, dry sowing and waiting for opening rains if necessary. These annual ryegrass paddocks provide winter feed for stock and hay for the leaner summer–autumn period.

“We shut these paddocks up in August/September and cut hay in October/November, which we keep for ourselves for leaner times,” Bradley said.

However, the 2021–22 summer was a good one, so Bradley decided to

sell the majority of the herd and hold a few lighter cattle a little longer until they reached target weights.

“In the past, we kept more heifers for our own use, rather than selling them off, to build up our numbers,” he said. “In recent years however, the prices have been good so we kept only what we need for replacements.”

Soil fertility

In 2020, Bradley noticed some paddocks were underperforming, so conducted soil tests.

“The tests showed our paddocks were low in phosphorus, so for the past two years, we've applied MAP (2020) or DAP (2021) with potash,” he said.

While he hasn't retested these areas, Bradley said the visual results are clear with an increase in production.

He's also applying lime every 3–5 years at 2.5t/ha on lower, acidic areas.

“We won't keep pouring fertiliser on – it will be on an as-needs basis. We'll keep soil testing and respond to that.”

Open to ideas

Bradley is a member of the Fleurieu Beef Group, a group of producers ranging from small hobby farmers to large breeding operations, covering organic, conventional and regenerative agriculture approaches.

“Having such a diverse membership teaches everyone in the group to keep a very open mind,” Bradley said.

“Everyone has a different approach, and if you see that the product someone else is producing is the same as what you're producing, it's interesting to see how they're doing that.” ■

SNAPSHOT



BRADLEY AND BRONWYN ARTHUR

and sons Giles and Hayden, 'Forest Hill', Hope Forest, SA



AREA

500ha (owned and leased/agisted)

ENTERPRISE

Self-replacing Angus breeding herd

LIVESTOCK

180 breeders

PASTURES

Improved pastures (clover, ryegrass and phalaris) and some irrigated kikuyu, ryegrass and white clover

SOIL

Sandy loam

RAINFALL

810mm

LESSONS LEARNT

- ✓ Stocking rate is a key consideration when it comes to available feed – it's easy to get carried away at good times of the year, so keep the poorest times of the year in mind.
- ✓ Keep feed on hand to carry over stock in difficult times – our district is resilient if stock graze the pastures hard in lean times, but we try to avoid that.
- ✓ Consider calving timing – we have our largest number of animals when we have the most feed and the fewest number of animals when feed is scarce.



Bradley Arthur brad05@internode.on.net Andrew Morelli amorelli@mia.com.au

Breeding more resilient cattle

Researchers have their sights set on improving the resilience of Australian beef cattle through a project which looks at the benefits of ‘immune competency’ across different breeds.

Immune competency is the strength of an animal’s immune system and is expected to become increasingly important in the face of a changing climate.

Through a new MLA-supported project, CSIRO researchers will use this factor to predict the ability of cattle to cope with disease challenges with minimal impact to growth and fertility.

This reflects core goals for the Australian red meat industry – sustainable production and animal welfare.

The Southern Multibreed Immune Competence Project – which involves cattle from the NSW Department of Primary Industries (NSW DPI) and University of New England (UNE) Southern Multibreed project – builds on previous trials into immune competence with cattle and sheep.

The project will investigate resilience traits across different breeds of beef cattle.

It won’t assess which breed is more immune competent, has better temperament or improved stress-coping ability.

Rather, it will identify attributes of a particular breed which make them better able to cope with specific challenges in their production environment and investigate if such attributes can be targeted in other breeds to improve their resilience.

Dr Brad Hine – a Research Scientist in CSIRO’s Livestock Health and Resilience Team – said a primary aim of the research will be to provide livestock producers with a genetic tool to help reduce disease

incidence and lessen their reliance on antibiotics to treat disease.

“The great thing about the livestock industry in Australia is that it’s very proactive when it comes to improving animal health and welfare,” Brad said.

“For example, we’ve been working closely with Angus Australia on identifying immune-competent animals and developing estimated breeding values for the trait.”

Climate resilience

The research will also contribute to breeding cattle which are more resilient to a changing climate.

“Climate change may create scenarios where animals are exposed to diseases that they haven’t seen before, and we need to help them to be better able to cope with these new challenges.

“It’s like how COVID has impacted humans; it takes time to vaccinate populations, so strategies where we can improve the general disease resistance of animals can help protect them against emerging diseases,” Brad said.

Economic benefits

As well as environmental benefits, breeding immune-competent cattle is expected to provide economic benefits for seedstock and commercial Australian beef producers.



Dr. Brad Hine, CSIRO research scientist.

RESEARCH UPDATE

WHAT’S IT ABOUT?

Improving the resilience of Australian beef cattle

WHY IT MATTERS

The ability to identify attributes of breeds which make them better able to cope with specific challenges in their production environment is a powerful genetic tool.

WHERE’S IT UP TO?

Part-way through

WHO’S INVOLVED?

MLA, CSIRO, NSW DPI and UNE

“For example, in feedlot cattle that we classified as being high immune-competent animals, we saw fewer health-related mortalities and incurred significantly lower health-related costs than did their average or low immune-competent counterparts,” Brad said.

“Healthier cattle result in a higher quality product for consumers. Cattle producers across all breeds should look to balance immune competent traits with production traits in their breeding. We are hoping to provide the tools and knowledge for them to do that through this project.”

Contributing breeds

Cattle for this immune competence project will be drawn from the wider Southern Multibreed project, with data from 1,500 steers and heifers a year for two years feeding into the research.

These cattle are the progeny of NSW DPI Southern Multibreed project herds at Grafton, Glen Innes, Trangie, Tocal and Camden (Elizabeth MacArthur Agricultural Institute). Angus, Hereford, Wagyu, Brahman, Charolais and Shorthorn (plus crosses) are included in the trial across a range of environments. ■



This project was showcased at the recent MLA Livestock Genetics Forum in Adelaide. Watch the presentations on MLA’s YouTube channel, [youtube.com/meatandlivestock](https://www.youtube.com/meatandlivestock) or scan this QR code

Brad Hine brad.hine@csiro.au Peta Bradley pbradley@mla.com.au



How to get more lambs on the ground

Australia’s sheepmeat industry outlook is positive, with forecast export demand for lamb and mutton increasing beyond current supply. So how can producers grow their flocks?

MLA funded a project with the University of Adelaide and Pinion Advisory to inform producers’ strategies to rebuild flocks and lift production.

Led by Associate Professor Forbes Brien from the University of Adelaide’s School of Animal and Veterinary Sciences, the research team developed flock rebuilding scenarios – taking into account the impact of variations in feed and stock prices across a range of production zones, enterprise types, breeds and flock age profiles.

For each rebuilding scenario, the model assumed each property was 20% below its optimum stocking rate, with a breeding ewe flock of 1,000 ewes and a target flock size of 1,250 ewes. They simulated a range of situations, such as drought, or a past reduction in stock numbers to make way for increased cropping, whereby each property had become understocked.

The project team looked at nine types of flocks/enterprises, ranging from self-replacing dual-purpose Merinos, to terminal sires, to wool-focused and rangeland enterprises – see table below.

Rebuilding options

Here’s a look at some of the flock rebuilding pathways:

1 Retain ewes for longer than normal, cull less or purchase more

One of the quickest ways to rebuild a flock is to retain ewes for longer, for example

selling breeding ewes at 7.5 years old rather than 5.5 years, or purchasing older ewes.

When purchasing ewes, producers should consider potential issues such as udder health, feet (in wet areas), uncertainty of genetic merit, worms, and Ovine Johne’s and other diseases. Weigh these concerns against other flock rebuilding options before proceeding.

Studies have shown ewes with poor udders are significantly less likely to rear a lamb. Producers can assess the ewes’ udder health from at least four weeks after weaning any time up to joining.

For most flocks/enterprises, this pathway had both good profitability and produced one of the quickest rebuilding effects.

Results indicated retaining older ewes was more profitable than retaining additional young ewes.

2 Improving fertility and lamb survival

Forbes said although it’s a slower rebuilding option, producers who cull dry ewes may be missing an opportunity, particularly if they’re looking to grow their numbers.

“If a ewe is dry at first scanning, we’ve shown that by quickly rejoining that ewe, she won’t be that far behind her contemporaries in performance,” he said.

“You don’t want to be getting rid of 15–20% of your flock that could otherwise have given you a boost. In a well-managed

flock situation, there may not be that many dry ewes, so it’s not going to give you a really fast pathway to rebuilding.”

He said producers who follow Lifetime Ewe Management strategies should already have good overall fertility, but if reproductive performance is down it could be due to sub-optimal nutrition or because joining is slightly out of season.

Twin and multiple lamb survival is another area to target – it’s often below 70% (compared to around 90% survival in singles), representing one of the best opportunities to increase numbers.

However, getting nutrition right so ewes hit condition score targets by the time of lambing is critical.

“Unless you’re doing these things right, don’t bother attempting to boost reproductive potential by increasing ovulation rates and other measures,” Forbes said.

3 Boost reproductive potential by increasing ovulation rate

This category of rebuilding includes three pathways:

- improving ewe nutrition pre-joining and into the joining period
- changing the joining period from spring/summer into late summer/autumn to align with the peak of the breeding season to maximise ovulation rate
- pharmacological approaches such as Ovastim.

Net present value/dry sheep equivalents (\$) of flock rebuild pathways (or benefit-cost ratios, in brackets)

Flock rebuild pathway	Self-replacing Merino			Merino-cross			Self-replacing Maternal	Self-replacing cleanskin	
	Dual purpose	Wool focus	Rangelands zone	Merino x terminal	Merino x BL	BLM x terminal		Agricultural zone	Rangelands zone
1. Retain older ewes	\$153	\$161	\$66	(1.4)	(1.6)	(1.4)	\$129	\$131	\$44
2. Retain more young ewes	\$18	\$35	-\$6	n/a	n/a	n/a	\$16	\$17	-\$26
3. Buy ewe hoggets	\$115	\$129	\$18	(1.4)	(1.6)	(1.3)	\$98	\$101	-\$2
4. Buy aged ewes	\$92	\$110	-\$7	(1.1)	(1.2)	(1.1)	\$82	\$84	-\$33
5. Re-join once-dry ewes	\$170	\$155	\$85	(4.0)	(4.0)	(4.3)	\$171	\$173	\$102
6. Increase twin lamb survival	\$153	\$105	\$63	n/a	n/a	n/a	\$162	\$164	\$84
7. Supplement ewes pre-joining	-\$8	\$18	-\$81	n/a	n/a	n/a	\$71	\$73	-\$45
8. Flushing with lupins for 2 weeks at joining	\$22	\$31	-\$54	n/a	n/a	n/a	\$99	\$101	-\$10
9. Inject Ovastim pre-joining	\$102	\$98	\$19	n/a	n/a	n/a	\$149	\$151	\$51
10. Join ewe lambs	\$78	\$59	-\$125	n/a	n/a	n/a	\$115	\$117	\$21
11. Accelerated lambing 1 – join every 8 months	\$1	-\$12	-\$87	n/a	n/a	n/a	-\$36	-\$20	-\$64
12. Accelerated lambing 2 – join every 4 months	\$7	-\$2	-\$70	n/a	n/a	n/a	-\$25	-\$11	-\$130
13. Increase Merino x Merino matings	\$24	\$40	-\$21	(0.8)	(1.0)	n/a	n/a	n/a	n/a
14. Sexed semen use	-\$335	-\$292	-\$344	n/a	n/a	n/a	-\$253	-\$251	-\$326

Top six pathways are bolded, unless the NPV/DSE value is negative. *Not applicable.

⬆ The economic merit of the flock rebuilding pathways for each of the nine flock types. These are primarily based on net present values (NPV)/dry sheep equivalents (DSE) (\$), except for the Merino-cross flock types, which have been based on benefit–cost ratios.



Read the latest MLA sheep industry projections at mla.com.au/sheep-projections

Improving ewe nutrition pre-joining usually involves providing additional high-quality green pasture, or supplementary feeding of cereal grains or legumes, usually barley and lupins.

‘Flushing’ with lupins has been successful in WA, however results have been less definitive when tried in Victoria.

Ovastim has demonstrated increased reproductive rates of around 23% in Australian studies, but capturing this advantage requires additional management to achieve optimal outcomes from twins and triplets.

“If implementing these options, it’s critical ewe nutrition is tailored to litter size,” Forbes said.

“Use ultrasound scanning to identify and separate dry, single and multiple-bearing ewes into different mobs and ensure you’re meeting targets for condition score, especially by lambing time.”

4 Joining at a younger age and joining more than once a year

Joining ewes as lambs, at around 7–10 months of age, has been shown to build numbers quickly and consistently.

It’s a profitable pathway across all self-replacing flock types modelled, except Merinos in the rangelands.

However, Forbes said producers must have their house in order nutritionally to ensure they get a good reproductive rate.

Ewe lambs require more intensive management than older ewes.

Reduced mob sizes and favourable lambing paddocks – sheltered and away from stressors – are important measures for improving lamb survival.

Joining ewe lambs can steadily rebuild flock numbers at a greater rate than focusing

on improved fertility and lamb survival or increasing ovulation rate, in part because ewe lambs are already available on the property.

The researchers also considered accelerated lambing systems – including a single flock mated at eight-monthly intervals, and joining every four months by splitting the flock into two.

Although results are promising, with more lambs born, achieving consistent reproductive performance from this approach has proved challenging for Australian producers.

In terms of profitability, results showed that accelerated lambing for flock rebuilding is only marginally profitable at best, because of the large amounts of supplementary feeding and additional management costs involved.

Challenges

All these flock rebuild strategies do present challenges – some based on the individual producer’s approach to change and risk.

As with any management changes, it’s important to consider factors such as:

- cash flow implications (for example, when buying in, cash flow can be negative in the first couple of years)
- strategies for managing larger flocks through dry seasons
- management implications of larger mobs.

Forbes said some of these options may not be profitable in rangeland environments, where infrequent mustering and property scale make intensive management strategies impractical. ■

Note: Older ewes and ewe lambs are a higher risk class of stock and therefore need a higher level of management. It is imperative that for both classes, the producer makes sure nutrition is right. Poor udder health is a significant contributor to lamb mortality in older ewes, while for ewe lambs, reduced mob sizes and favourable lambing paddocks contribute to improved lamb survival.

RESEARCH UPDATE

WHAT’S IT ABOUT?

Viable and economic flock recovery based on business goals, risk appetite and current flock base.

WHY IT MATTERS

The future export demand for Australian sheepmeat is bright, but there’s a missed opportunity to supply more premium sheepmeat products to our customers, benefiting the whole supply chain.

WHERE’S IT UP TO?

Finalised

WHO’S INVOLVED?

The University of Adelaide, Pinion Advisory, MLA

SEASONAL ACTION PLAN

1 Understand the basic reproductive performance of your current flock first. The Lifetime Ewe Management program provides hands-on training in condition scoring, pasture assessment and best practice ewe and lamb management to increase reproduction: wool.com/people/education-and-leadership/lifetime-ewe-management

2 Before joining ewe lambs, set target weights and growth rates, and put a plan in place to hit those targets. Refer to MLA’s Towards 90 and the Lifetime Ewe Management module on joining ewe lambs: towards90.com.au

3 If buying extra ewes, research genetics and consider potential biosecurity or health risks from purchasing stock.

4 Before purchasing large numbers, talk to your financial provider and thoroughly consider the target payback period.

5 Consider available feed reserves before increasing numbers – access MLA’s stocking rate calculator, feed demand calculator and feedbase budgeting tool from elearning.mla.com.au/tools-calculators



Scan this QR code to watch a presentation with Associate Professor Forbes Brien, as he discusses different flock rebuilding pathways.

Dr Forbes Brien forbes.brien@adelaide.edu.au Joe Gebbels jgebbels@mla.com.au Melanie Smith msmith@mla.com.au



Meet the top MSA producers

Beef producers who consistently delivered beef of superior eating quality were recognised at the recent Meat Standards Australia (MSA) Excellence in Eating Quality Awards.

The awards are part of a national series across six states, which included forums where producers and others along the supply chain heard from industry speakers on how to maximise value using the MSA program.

The theme for this year's series was 'Growing and grading the greatest meat on earth', with a focus on how this can be achieved while creating more value for all parts of the red meat industry.

The series provided a platform for MSA to launch the latest Australian Beef Eating Quality Insights (ABEQI) report.

This report aims to help beef producers optimise the eating quality of their cattle by demonstrating the impact of various production factors on the MSA Index.

This biennial benchmarking report enables the Australian beef industry to measure its improvements and identify areas where further gains can be made.

The latest report was generated from the analysis of MSA grading results of 71 million cattle, processed and graded through 38 MSA-licensed processors nationally during the 2019-20 and 2020-21 financial years.

Here's a breakdown of MSA consignment across Australia during the 2019-21 awards period:

-  **>1,600** Producers consigned MSA Cattle
-  **>455,000** MSA cattle consigned (6% of all MSA-graded cattle)

MSA Excellence in Eating Quality Awards winners:

Most outstanding MSA feedlot	Most outstanding MSA beef producer – band 1*	Most outstanding MSA beef producer – band 2**	MSA Progress award	Champion MSA Index carcass
Western Australia				
Kylagh Feedlot Tammin	BL & SJ Nairn Albany	Carmelo Vinci Beelerup	Mark and Dorothy Haggerty Capel	Murray Vale Farm Waroona
South Australia/Northern Territory				
Thomas Foods International, Iranda Feedlot Tintinara, SA	Rhys Fischer, Yarli Pastoral Waltowa, SA	Ken and Kay Klopp Maitland, SA	Broad Cattle Hallett, SA	Thomas Foods International, Iranda Feedlot Tintinara, SA
Queensland				
Stockyard Lot Feeders Pty Ltd Jondaryan	Rod, Kylie, Tori and Kaitlin Apelt, Collingwood Pastoral Company Tara	John and Karol Wilkes Pittsworth	Max and Mona Ballantyne, Hardenley Pty Ltd Gin Gin	McNamee family, Lemontree Feedlot Millmerran
New South Wales				
HW Paterson & Son Balranald	ME Barr-Smith Holbrook	Shadowgrove/ Khancoban Station Khancoban	Doolin Farming North Star	Ramps Ridge, Ravensworth Feedlot Hay
Tasmania				
N/A	Kevin and Gill Johnson Preston	SA Holloway Ranga	Van Dairy Woolnorth	Robert Skipworth, 87th Manterra King Island
Victoria				
RM Gillett & Co Pty Ltd, Jalna Feedlot Anakie	Craig and Isla Delmenico, Delco Farm Pty Ltd Ultima	Murray and Heather Stoney Modewarre	York Bay Gunbower	Harmony Operations Australia, Dimboola Feedlot Gerang Gerung

*Producers turning off large MSA consignment volumes from any non-feedlot operation.
** Producers turning off smaller MSA consignment volumes from any non-feedlot accredited operation. ***Greatest improvement in their MSA results since the last awards in 2019.

>770
Producers consigned
MSA Cattle

>442,400
MSA cattle consigned
(6% of all MSA-graded cattle)

>2,800
Producers consigned
MSA Cattle

>3.4 million
MSA cattle consigned
(50% of all MSA-graded cattle)

>4,600
Producers consigned
MSA Cattle

>1.6 million
MSA cattle consigned
(23% of all MSA-graded cattle)

>2,600
Producers consigned
MSA Cattle

>758,000
MSA cattle consigned
(11% of all MSA-graded cattle)

>2,400
Producers consigned
MSA Cattle

>302,400
MSA cattle consigned
(4% of all MSA-graded cattle)

The MSA Excellence in Eating Quality Awards recognise beef producers who have achieved outstanding compliance rates to MSA specifications, as well as high eating quality performance as represented by MSA Index results for MSA-graded cattle during the 2019-20 and 2020-21 financial years.

To be eligible for the awards, an MSA producer must have:

- supplied volume (MSA cattle) in the top 50% for that state and feed type
- had at least average compliance rate for the state
- consigned MSA cattle at least once per year (2019-20 and 2020-21).

As well as awards for feedlots and producers, a new award was presented this year for the highest scoring MSA Index for a carcass in each state. ■

» Continued next page.



« Continued from previous page.

MSA leaders reveal their winning ingredients



Here, some of the winners of this year's MSA Excellence in Eating Quality Awards share their tips for achieving consistent compliance.

QUEENSLAND

Most outstanding MSA beef producer – band 1

Rod, Kylie, Tori and Kaitlin Apelt, Collingwood Pastoral Company, Tara



✔ MSA compliance	99.9%
★ Average MSA Index	62.03

Amid a booming cattle market, producing cattle that continue to achieve high rates of compliance to MSA remains a priority for Queensland beef producers, Rod and Kylie Apelt.

With their son, Tori, and his wife Kaitlin, the Apelts run 1,500 breeders, producing purebred EU-accredited Santa Gertrudis, Angus and Santa Gertrudis–Angus cross cattle, on a combination of improved pastures and forage crops.

They finish cattle for processing as milk-tooth cattle with a 520-600kg live weight to supply Coles or Woolworths and have also been recently targeting the feeder market, due to current market conditions.

They look to carcass data as a benchmarking tool in their business to ensure their cattle hit the MSA target.

Quality nutrition is a key factor in consistently producing high eating quality beef and is achieved through:

- improved pastures to finish weaners, including Bambatsi, Reclaimer Rhodes Grass, buffel and green panic
- forage sorghum, oats and barley
- when forage dries off, cattle are supplemented with molasses-based liquid supplement Molafos
- if it's really dry, cattle are supplemented in the paddock with grain
- opportunistic silage production.


Genetics is also important, and the Apelts look for traits such as high intramuscular fat (IMF) and a reasonable eye muscle area (EMA) when buying bulls.

Docility is also important and, after weaning, the Apelts spend 2–3 weeks in the yards working with the weaners to settle the cattle into their environment.

SA/NT

• Most outstanding MSA feedlot
• Champion MSA Index carcass

Thomas Foods International, Iranda Feedlot, Tintinara, SA



✔ MSA compliance	99.5%
★ Average MSA Index	63.66

Year-round shade and straw bedding in winter are among the ways the team at Thomas Foods International Iranda Feedlot ensure the wellbeing of the 15,000 cattle in their care.

An unwavering commitment to animal welfare also continues to deliver productivity benefits for the EU-accredited feedlot, including their consistent achievement of exceptional rates of compliance to MSA specifications.

The 17,500-head capacity feedlot comprises mostly Angus cattle, targeting a range of markets including the domestic market supplying Woolworths, as well as export markets.

The feedlot turns off 50,000 head annually, with all cattle sent for MSA grading, regardless of whether they're destined for domestic or export markets.

It's run alongside an Angus breeding and background enterprise and farming operations including pivot irrigation for growing fodder crops for the feedlot.

The feedlot is constantly evolving to produce higher quality beef more efficiently, with a view that feed conversion and carcass quality are more important than average daily gain.

Strategies which deliver animal welfare outcomes as well as higher performance include:


- straw bedding in all pens from May through to September, depending on the season
- shade structures which improve animal welfare and increase feed consumption in summer
- rations formulated by a consultant nutritionist to balance fibre, energy and protein
- staff training in low-stress stock handling techniques
- minimising co-mingling of pens and drafting cattle two weeks before their exit date.

The business uses the MSA Index as an easy and fast measure of carcass quality, to benchmark suppliers and monitor seasonal variances.

NEW SOUTH WALES

MSA progress award

Doolin Farming, North Star



The decision to move from in-paddock opportunity feeding of cattle to building and operating an accredited 1,000-head feedlot was a turning point for NSW mixed farmer, Angus Doolin.

Driven by drought conditions, Angus and his family developed a drought lot on their 15,000ha property 'Springfield', near North Star, creating the opportunity to trade cattle and ability to feed homebred cattle.

In August 2020, a desire to move to a more efficient feeding approach led the Doolins to develop and gain accreditation for a 1,000-head feedlot, where they currently feed 900 British breed trade cattle for 85 days to supply into the Coles market at a target live weight of 550kg.

They produce feed on-farm, and cattle are fed a varying mix of barley silage, grain, cotton seed, liquid supplement and hay to target an average weight gain of 1.9kg/day.

The Doolins source cattle from up to a 400km radius – handling of cattle when they arrive on-farm is critical, to minimise stress as much as possible. They put cattle onto hay and then a pre-starter ration in a small paddock for up to 10 days before fully inducting them into the feedlot, so cattle settle in.

Angus also attributes their success to his staff, who are extremely dedicated to the cattle and their nutrition and welfare.

For the Doolins, the ability to access MSA and Coles feedback has also been a driving factor behind their performance, particularly in such a hot cattle market.

"The more you know and understand about your cattle and the way they perform, and the more you can drill down into that data, the more confidence you have when making buying decisions," Angus said.

"It's an invaluable tool to inform decisions around which cattle to buy, and it's something we're using more and more as we gain experience in lot feeding."

WESTERN AUSTRALIA

Most outstanding MSA feedlot

Kylagh Feedlot, Tammin



✓ MSA compliance **99.15%**
★ Average MSA Index **61.89**

Dedication to animal welfare and optimum nutrition have been pillars to improving MSA compliance and MSA Index for the Rogers family, Kylagh Feedlot, Tammin, WA.

Ivan and Jill Rogers operate the 6,000-head feedlot in WA's central Wheatbelt, feeding predominantly Angus and Angus Wagyu first-cross cattle, as well as mixed breeds. They also have cropping, cattle trading and backgrounding and breeding operations.

Kylagh Feedlot operates as a 100% custom feed yard with the largest client being Kylagh's own trading business, Kylagh Cattle Pty Ltd.

Kylagh Cattle has been registered with MSA since the inception of the program, to achieve better outcomes for the business through access to premium markets and to deliver benefits for the consumer.

Their compliance strategies include:

- strong communication between the feedlot and clients, to understand end specifications to ensure cattle meet these targets
- Kylagh Cattle Pty Ltd's focus on genetic selection within the Wagyu program
- using carcass feedback through the myMSA portal, in conjunction with carcass reports from the processor, to analyse the performance of each group of cattle
- using a single, trusted transporter to ensure cattle are transported safely
- an emphasis on animal welfare
- low-stress cattle yards designed by renowned animal behaviourist, Dr Temple Grandin
- minimal stress in the yards, with no motorbikes, horses or dogs
- strong focus on nutrition, including working with a nutritionist and sourcing premium grain with high energy and high starch.

Carcass feedback is accessed through the myMSA portal and used in conjunction with carcass reports from the processor to analyse the performance of each group of cattle.

"We know with our programs that we will be in the higher MSA Index range, so when we achieve those high MSA Index of +61.00, and with our Wagyu, chasing medium-high marbling of at least AUSMEAT marble scores of 6 and MSA marble scores of 800, it gives us confidence that we are producing beef of high eating quality," Ivan said.

"MSA is an integral part of the red meat supply chain."

VICTORIA

Most outstanding MSA beef producer – band 1

Craig and Isla Delmenico, Delco Farm Pty Ltd, Ultima



✓ MSA compliance **100%**
★ Average MSA Index **64.17**

For Victorian Mallee mixed dryland farmers, Craig and Isla Delmenico, the relationship between handling of cattle and their performance cannot be overstated.

They run approximately 150 British breed trade cattle across their predominantly cereal operation and target an average turn-off weight of 550kg for the supermarket trade – aiming for an average weight gain of 1.7kg/day.

The Delmenicos, who source weaners at around 250–300kg live weight, believe the origin of the cattle can have an impact on their temperament and performance. While it is dependent on the price and season, they prefer to source cattle from the south as they have typically had more exposure to handling and are quieter as a result.

"Once they arrive home, we focus on consistency with our handling – we use the same vehicle and same people to check the cattle each time, and even our agents know where to park when they visit so as not to alert the cattle with an unfamiliar vehicle," Craig said.

The Delmenicos use MSA as a tool to track performance and tweak their production system.

For example, they used MSA feedback to narrow down to one preferred carrier who handles and delivers cattle in a way that lets them perform as well as possible.

They've also seen the results of:

- drafting cattle into weight classes as soon as they arrive
- drafting, drenching and needling at once to reduce handling
- sorting cattle again into weight groups at least three weeks prior to transport.

The Delmenicos see benefit in the opportunities for continuous improvement that MSA feedback provides producers.

"We find the MSA Index useful as an indication of carcass performance and ensure MSA compliance to pH (below 5.71) and fat is achieved. We also keep an eye on P8 fat to ensure the cattle aren't over done," Craig said.

"As an industry, access to data is critical to honing in on areas for improvement and working out how to get more from the cattle you buy or breed."

TASMANIA

Most outstanding MSA beef producer – band 1

Kevin and Gill Johnson, Preston



✓ MSA compliance **99.75%**
★ Average MSA Index **62.97**

When Kevin and Gill Johnson changed their farming operation to focus on beef cattle after 45 years as dairy producers, one of their first priorities was to learn more about MSA.

They became registered MSA producers in 2012 – a decision that paved the way for the fourth-generation producers to join the Greenham Never Ever Beef Program, with their grassfed cattle used for Greenham's premium Cape Grim beef brand.

Kevin and Gill run between 180 and 230 head of mostly Angus cattle, purchased as young stock from the local saleyards at around 280–380kg, to be finished at a target carcass weight of 360–390kg.

"All our cattle are MSA-graded with our processor paying premiums for the higher graded cattle. Accessing the grading data also helps us with management decisions," Kevin said.

Their property receives an annual average rainfall of 1,300mm which, when combined with ferrosol soils, results in prime pastures ideal for finishing cattle. The dominant pasture is perennial ryegrass, and cattle are finished on pastures and a supplementary feed using their own silage.

Growth targets are 1kg/day and then up to 10kg/week during the finishing period while having cattle on a rising plane of nutrition.

Other management strategies to target market compliance include:

- using low-stress handling techniques for calm cattle and, ultimately, meat quality
- keeping big changes to a minimum close to sale time, including not mixing cattle from different mobs for at least three weeks prior to processing to keep cattle calm and combat the issue of dark cutting
- a few days before transport, providing cattle with the water-soluble supplement, Cattle Tranz, which contains electrolytes including calcium, sodium, potassium and magnesium.

Kevin and Gill receive carcass feedback reports from Greenham once their cattle have been processed, with the comprehensive reports including MSA Indexes. These reports, including marbling, pH and ossification results, are used to guide on-farm decisions and help them determine preferred suppliers.



To find out more information about the MSA program visit: [mла.com.au/msa](http://mla.com.au/msa)

MSA producers can access their carcass feedback at mymsa.com.au

The 2021 Australian Beef Eating Quality Insights report is available online and in hard copy – visit mла.com.au/msa-2021-abeqi

David Packer dpacker@mла.com.au

Truck safely in the extremes

From floods to fires, 2022 has already presented the extremes of climatic challenges, creating widespread disruption to the national livestock supply chain.

According to Frasers Compliance Manager and TruckSafe* Animal Welfare Vice Chair, Athol Carter, it's been a year like no other for transporting livestock.

"We've certainly had widespread disruption across Australia on a scale never seen before, now we're back in a La Niña phase," Athol said.

"With the vast distances that we travel as transporters, the weather can instantly change – what's happening at Winton might be totally different to the weather at Windorah."

Communication is key

The extreme nature of current climatic conditions reinforces the need for clear communication between producers and their transporters.

"The more you communicate and talk to each other, the easier the job is," Athol said.

"Transporters can't see 1,000km in front of us, and we don't know for sure the night or afternoon before what it's actually like on the ground.

"If you've made a truck booking in advance and there's imminent weather, please be contactable – it's all about working together and sharing the right information from the start."

Stay alert

Producers should be vigilant about monitoring local routes for their transporters, to alert them to events such as flash flooding.

"Unfortunately, we can't always rely on weather or route planning tools due to the lag time of information upload about closed roads, so we really need to have those open lines of communication with properties for alternative routes," Athol said.

"Sometimes producers need to be our eyes and ears locally."

Plan ahead

If weather events and extreme heat or cold conditions do arise while transporting livestock, Athol said it's essential producers and transporters prepare for the unexpected.

"You should have an emergency plan should the worst-case scenario pop up, especially for finished cattle and sheep going to processing out of the paddock and feedlots," he said.

"This could include taking them to a nearby saleyard facility en route to spell and feed the livestock, or even for processors and meat marketers to divert consignments to different

processing sites (intrastate or interstate).

"Transporters also need to take into account driver rest, amenities and refuelling facilities if the journey is significantly increased due to the weather.

"If the last few years have taught us one thing, it's that we need to be adaptable."

Preparing livestock

Athol said preparing livestock for their journey in line with MLA's *Is the animal fit to load?* guide is also key to ensuring animals reach their destination safely.

"It's all about prior preparation and ensuring only animals fit for transport have been selected for the journey," Athol said.

"Well-prepared animals travel better and are prone to less stress-related or animal welfare issues – if in doubt, leave it out."

If it's flooded, forget it

If floods or large rainfall events like those expected in the coming wet season do occur, Athol recommends delaying transport of livestock where possible.

"We're losing too many lives each year with people driving through flood waters, and livestock are better off in the paddock than stuck on the road," Athol said.

"The last thing anyone wants is to destroy roads and no one can afford to have trucks stuck for weeks on end – it impacts the productivity, efficiency and viability of the entire supply chain."

**TruckSafe is the only freight industry accreditation which addresses human safety factors and animal welfare. It underpins industry programs such as Meat Standards Australia and Livestock Production Assurance to maintain supply chain integrity. ■*

» Turn to pages 22–23 to hear from a producer and a transporter about safe livestock transport.

✓ Frasers Compliance Manager and TruckSafe Animal Welfare Vice Chair, Athol Carter.

"If you've made a truck booking in advance and there's imminent weather, please be contactable – it's all about working together and sharing the right information from the start."





🔗 Ensuring animals reach their destination safely is a priority for Frasers Transport.

SEASONAL ACTION PLAN

- 📌 **Communicate with your transporter about route access conditions** and any imminent weather events, especially during the wet season.
- 📌 **Let your transporter know if there are any local government restrictions** in your area around detours and load limits.
- 📌 **Check the roads are open and safe** during floods and wet weather.
- 📌 **Have a back-up plan in place for livestock being transported**, in case of an emergency, wet weather or for heat load management.

Checklist: Transporting livestock safely

Here's a checklist to prepare livestock for transport to ensure they arrive in good condition:

- ✓ Yard livestock before loading, preferably overnight so they have time to rest and settle.
- ✓ Check the loading yards and ramp are adequate.
- ✓ Avoid transporting sick, injured or heavily pregnant animals.
- ✓ Use low-stress handling techniques to prepare and load livestock.
- ✓ Avoid conducting husbandry practices just before loading.
- ✓ Separate livestock appropriately for loading and load livestock to the correct density.
- ✓ Keep livestock off feed and water for 8–12 hours prior to transport if possible, but remember strict maximum times off water and minimum spelling periods apply.
- ✓ Use a TruckSafe accredited livestock carrier.
- ✓ Make sure you have all consignment forms that you will need to provide to the transporter, including a Livestock Production Assurance (LPA) National Assurance (LPA) National Vendor Declaration (NVD).
- ✓ Learn how to fill out an LPA NVD so it is clear, complete and correct – it's also handy to know how to use the eNVD system to complete an LPA NVD on-demand.
- ✓ Know who you can contact in case of emergency, like a flood or fire, before transport.

TRANSPORT

TRANSPORT TOOLS

📌 Use MLA's *Is the animal fit to load?* guide to check if livestock are in suitable condition for transport: mla.com.au/fittoload

📌 Scan this QR code to watch a video to learn how to complete your LPA NVD so it is clear, complete and correct.



📌 In a hurry to transport livestock ahead of a weather event? Scan this QR code to watch how to complete an eNVD – the faster, easier way to complete livestock consignment forms.



📌 Visit your state or territory's traffic or road condition website to check the road conditions in your local area.

📌 Find out if your livestock transporter is TruckSafe accredited and learn more about TruckSafe's animal welfare quality assurance program at trucksafe.com.au



The producer: Preparation for transport locks in cattle condition

For New England beef producers Lock and Liz Rogers, prior preparation is everything when it comes to ensuring their cattle arrive in top condition for their buyer.

Along with their farm manager Adam Faint, Lock and Liz run a self-replacing herd, with Angus breeders joined to Wagyu bulls.

With most of their cattle turned off into long-fed programs for export, Lock said particular care is taken on both their properties to ensure cattle are in good order for transport to feedlots.

“We always make sure we’ve had the cattle in the yards pretty recently before trucking, and we draft them up to see which cattle are going,” Lock said.

“For cattle that are going into the feedlots, they would’ve been into the yards at least a week prior to transport, and anything that’s lame or injured, we’d draft out. They’re then checked again the day of loading.”

Spelling livestock before their journey is also essential to make sure they’re fit for transport.

“We’ve only got one set of cattle yards on ‘Karuah’, so quite often cattle to be loaded have had a bit of a walk to get there,” Lock said.

“With these cattle, we walk them down several days before transport and they are spelled for a couple of days before they go on the trucks.”

Reducing stress, making space

When it comes to loading livestock, Lock said minimising stress placed on cattle as they load goes a long way to ensuring their welfare and wellbeing.

“We’ve pretty much got a no-jigger policy on our farm,” Lock said.

“Handling stock quietly and in a stress-free manner is really important – and I know there’s a lot of producers doing that now.”

Lock said working with transporters to give cattle the correct amount of space in each pen on the truck was another way to ensure cattle arrive at their destination uninjured.

“For example, with our feeder steers, we make sure there’s an even number in every pen, depending on their weight.”

Upgrading facilities

The Rogers maintain their loading facilities so livestock can be loaded quickly and safely, and recently made modifications to loading ramps to improve the flow of livestock through the yards.

“Our old loading ramps used to be quite short and steep, being the same width as a normal race leading up to a crush or working area,” Lock said.

“Now, we make our loading ramps and race going up to the trucks 100mm wider and the cattle flow freely as the ramps are now longer and more gradual.”

They have also added grips and treads all the way up the race and slope of the ramp, to prevent cattle slipping and panicking.

“Even better still would be a loading dump straight into a yard – which we’ll incorporate into the next set of yards we build this autumn.”

Expect the unexpected

Climatic extremes have reinforced the value of having a fallback plan in place for loading or unloading livestock.

“You always need to be prepared,” Lock said.

“In March last year, we had massive rains and we couldn’t get trucks to our cattle yards because the roads were so washed out.

“We had to be a bit flexible and communicate with our neighbour and transporter, and we walked them down to a holding paddock at our neighbour’s property the night before and then loaded them safely from there.

“You need to be a little bit creative sometimes with your arrangements to be safe.” ■

SNAPSHOT



LOCK AND LIZ ROGERS, ‘Gara Gunyah’ and ‘Karuah’, Armidale, NSW



AREA

1,885ha across two properties

ENTERPRISE

Cattle

LIVESTOCK

Self-replacing Angus herd, with 50% of females joined to Wagyu bulls

PASTURES

Improved pastures

SOIL

Mostly fine granite with areas of basalt and alluvial flats

RAINFALL

800–900mm



Lock Rogers loading cattle in the yards at ‘Gara Gunyah’, Armidale.



Lock Rogers lock@rogerslivestock.com.au

The transporter: Safety's your best bet

Safe loading and transport of livestock is something Lock Rogers' (see story opposite) brother-in-law, Chris Betts, also knows a thing or two about as the owner of Walcha-based livestock transport business, Betts Rogers Transport.

Trucking sheep and cattle across vast expanses of NSW, Queensland and Victoria, Chris' drivers are committed to ensuring livestock are moved smoothly and safely for their clients – a process which all starts with livestock that have been well prepared for the trip ahead.

"Making sure cattle are in the yards, settled down and not straight in from mustering helps with a safe and straightforward loading for everyone, including the cattle themselves," Chris said.

"Similarly, bringing sheep in on curfew ensures they can arrive in good condition, as it means sheep won't be impacted by effluent getting down through the gaps in the decks and building up on the bottom deck of the truck."

Fine-tuning facilities

With his insights into loading facilities around the country, Chris said loading livestock can be achieved safely and efficiently with the aid of a few innovations to loading infrastructure.

"Lock, my brother-in-law, has added some really good features to his yards that makes them very workable for everyone," Chris said.

"He's put rubber along the sides of his loading ramp, so the cattle don't see anything that makes them want to turn around.

"Instead, they just go straight up into the truck and next thing you know, we're shutting the door behind them.

"A good walkway up the loading ramp, as well as an access gate so the driver can follow the cattle in or easily get into the race they're running up, helps as well with making sure the cattle flow."

Travelling safely

Working together with producers to monitor transport routes and plan a safe, efficient journey is also essential to make sure livestock arrive at their next destination in peak condition.

"Our transporters keep an eye on the local traffic and local council alerts, as you've got to be really careful – especially with the many floods and fires occurring – that you're not going down a road that's unsafe," Chris said.

"It's hard sometimes because you don't know what's ahead of you, so sometimes you need the help of the producer at the other end to let you know about any wet weather or disruptions to the route."

Installing tracking technology within their trucks has also helped Chris' transport business ensure trips can go smoothly, reducing any excess time in transit that may place stress on livestock.

"Sometimes you need the help of the producer at the other end to let you know about any wet weather or disruptions to the route."

"We've got trackers on our trucks, so if customers ring us with any concerns, we can check on our phone or computer where the drivers are at all times," Chris said.

"With this technology, we always know where our trucks are and can give them pinpoint locations of where the loading facilities are – which is a great help when making sure the journey time is minimised for livestock."



Putting welfare first

At the end of the day, Chris said being consistent with monitoring the welfare of livestock throughout loading and transport was one of the most important things to be done to ensure livestock are moved safely.

"Our drivers realise animal welfare is the most important thing of all, and they're very experienced stock handlers," Chris said.

"They know they don't just need to look after their equipment, but the cattle as well." ■



  Chris Betts chris@bettstransport.com.au

◀ Walcha-based livestock transport business, Betts Rogers Transport, also prioritises safety when it comes to loading and transporting animals.

Mapping the path to higher productivity

Running sheep and goats together in the Queensland rangelands is no easy feat. Preventing overgrazing is one of the key challenges, as smaller ruminants tend to overgraze certain patches while leaving others untouched.

New research by CQUniversity in conjunction with MLA, the Queensland Department of Agriculture and Fisheries, and New Mexico State University, has shed light on how sheep and goats utilise landscapes, unlocking new insights into how they can be managed together.

Tracking interactions

The research lead, CQUniversity Professor Mark Trotter, said the project used livestock collars fitted with GPS tracking technology to discern how sheep and goats interact with the feedbase across different rangeland properties.

“In the rangeland country of western Queensland, producers know there’s variability in terms of where animals go to graze and that there are certain areas that they avoid – they also have a gut feeling this might mean something in terms of production and sustainability,” Mark said.

“What we’ve tried to do is collect objective data around those behaviours. We used GPS tracking to get a full picture of how variable the utilisation of the landscape actually is.”

Pinpointing main grazing locations

The trials revealed the potential of GPS tracking technology to drive management decisions such as where watering points could be placed to optimise pasture utilisation within rangeland sheep and goat enterprises.

“Using this tracking technology, we’ve been able to determine there’s a maximum distance of roughly 2.4km from watering points beyond which animals really don’t like to travel,” Mark said.

“This knowledge could help refine where producers locate their watering points to ensure there are not patches of pastures being unused as it’s too far from water for animals to walk out to.

“However, each property is likely to be quite different based on the landscape, soil type and vegetation class, so using this technology to place infrastructure on your own property will be the real key.”

Understanding where sheep and goats are and aren’t grazing could also assist producers to make decisions around stocking rates to ensure maximum productivity, while maintaining land condition.

“It’ll be useful for producers to see where these animals actually went and where they did not go – there were some surprises in the data we’ve generated, where producers thought livestock were working certain areas of the country but really spent very little time in that area,” Mark said.

“This information could be extremely useful when deciding exactly how to subdivide paddocks to get the most out of them, or for informing decisions around moving livestock out of a paddock or implementing other strategies to protect certain pastures that are being overgrazed.”

Real-time GPS tracking in sight

Plans to use the technology to measure how these management strategies could optimise productivity have been delayed due to COVID-19, however Mark anticipates producers could soon access the technology themselves.

“The really exciting next step will be the development of real-time GPS tracking systems which deliver this sort of information to a producer in a map as it’s actually happening,” Mark said.

“These technologies are being developed for cattle but will need adaptation for small ruminants.

“Commercial livestock tracking technologies for sheep and goats will be available in the near future, enabling producers to really explore what their animals are doing in their own unique landscapes under their own management and then use that information to optimise that.”

He said other applications of this technology include detecting plant toxicity and predation. ■

» Turn to page 26 to see how a Queensland producer is using GPS data from the trial to manage livestock.



Research lead and CQUniversity Professor Mark Trotter.

RESEARCH UPDATE

WHAT’S IT ABOUT?

Monitoring sheep and goats using GPS tracking technology

WHY IT MATTERS

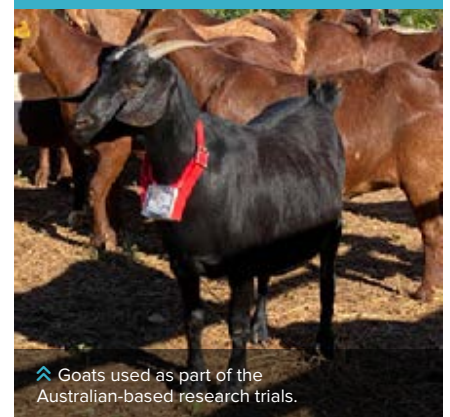
New insights about how sheep and goats utilise rangeland landscapes will inform decisions related to water infrastructure and grazing management.

WHERE’S IT UP TO?

First phase of research complete

WHO’S INVOLVED?

CQUniversity, the Queensland Department of Agriculture and Fisheries, MLA and New Mexico State University



Goats used as part of the Australian-based research trials.

✓ Derek Bailey fitted GPS collars on cattle to monitor their movements in real time on Deep Well Ranch.

Tracking cattle around the globe

Across the Pacific, on-animal sensors and tracking technologies are being trialled as a means to improve pasture utilisation and animal welfare on ‘Deep Well Ranch’ in Yavapai County, Arizona, US.

New Mexico State University’s Professor of Range Science, Derek Bailey, has been tracking cattle since 1998 and has been working closely with CQUniversity Professor Mark Trotter (see previous page) to trial a range of technologies on the ranch with the support of the Harold James Family Trust.

“We’ve done several studies using these technologies and by working together with Mark, we’ve made great progress in understanding how rangeland landscapes are utilised by livestock,” Derek said.

Remote water monitoring

One of the trials conducted has successfully used GPS tracking technology and accelerometers to identify patterns of cattle movements that emerge when water sources aren’t functioning.

“In one study, we used real-time cattle tracking and simulated a water failure,” Derek said.

“Just like we’d predicted, when the water system failed, the cattle just stayed around the water source rather than moving away – and the GPS tracking readily detected that.

“That real-time information could be used to notify the producer via text message of water failures, which would reduce some of the labour required to check waters and ensure livestock are not out of water for long.”

Pasture patterns

Further studies tracking cattle movements on the ranch have produced a range of insights into how cattle graze in accordance with pasture availability and temperature.

“In another study, we put GPS collars on cows in two different-sized paddocks and monitored their associations,” Derek said.

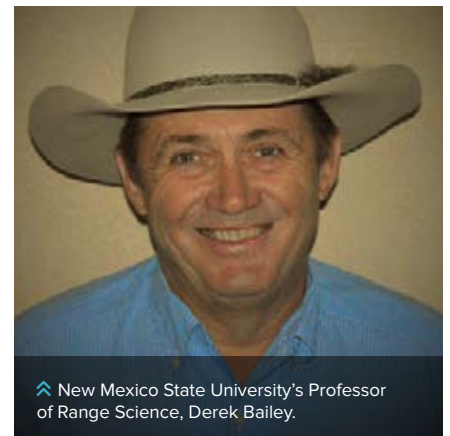
“We noticed that especially in the smaller pastures, as the pasture is grazed down, the cattle were spreading out looking for forage – meaning you could use that real-time tracking to decide when you should move livestock from one pasture to the next.

“More recently, we’ve been looking at the impacts of temperature and lunar phase on cattle movements and using various technologies.

“We’ve also confirmed that when there’s a full moon and it’s hot, cattle won’t stay close to water like usual but will spread out and graze more at night.”

Making the most of the feedbase

Into the future, Derek said these technologies could be used in both Australian and US rangeland landscapes to assist producers to get the most out of their feedbase, while ensuring the health of their livestock.



^ New Mexico State University’s Professor of Range Science, Derek Bailey.

“We suspect many patterns of livestock movements, but with this technology we can actually prove it and quantify it.”

“This real-time tracking could enable us to see when livestock are concentrating too much in one area, so we can do something about it – such as move them to a new pasture or put out supplement to lure them away from the area,” Derek said.

“If there’s something unusual happening, such as cattle not coming in for water, you can also see it.

“We suspect many patterns of livestock movements, but with this technology we can actually prove it and quantify it.” ■



✉ Derek Bailey dwbailey@nmsu.edu ✉ Joe Gebbels jgebbels@mia.com.au

GPS delivers grazing insights

Longreach producer James Walker is one of the producers trialling GPS tracking technology (see story page 24) to map how Dorper sheep and rangeland goats are utilising pastures on his property, 'Camden Park'.

Like many producers in the region, James has placed exclusion fencing around the entire perimeter of his property. He's also exclusion-fenced six internal paddocks to explore opportunities around producing sheep and goats on Camden Park.

Sustainable pasture use is a key goal of James' enterprise, so he took part in the CQUniversity-led trials to better understand how his smaller ruminant species graze the land and interact with carbon use efficiency.

"We've had two trial periods where we've put GPS tracking collars on sheep and goats, and we've run the sheep and goats simultaneously to see if they've got different grazing patterns," James said.

"We're in the early stages of gathering data but we're interested to see what we find around managing animal behaviour better to improve our productivity gains."

Tracking behaviour

While the second trial on Camden Park is still underway, James said the tracking technology has already produced a range of concrete insights into how sheep and goats use rangeland pastures, such as:

- his sheep like to graze in open country, while the goats like to graze amongst and around the timber
- goats are extremely territorial – more so than sheep
- goats browse extremely aggressively – the Dorpers do as well, but not as much as the goats.

"Goats are always on the search for high protein sources and while we've always noticed this, we've never had the data to back that up, so it was pretty extraordinary

to see that goats will really be on the hunt for feed in a frenzied manner," James said.

"We were also able to see from the tracking technology when the ewes and does spent 12 hours in one spot, revealing that they were little clusters in the paddocks where they were lambing or kidding."

Shaping decisions

James said using GPS tracking to understand the typical movements and grazing habits of sheep and goats will be valuable to inform management for maximum productivity on-farm.

"The technology has shown that goats graze particular areas, so we certainly would do our fencing differently to adapt to that, and then we would potentially alter our water set-up, as we've seen that the goats keep more to open dams as opposed to troughs.

"It was amazing to see the daily distance that goats travel and obviously they use a lot of energy walking around, so restricting the size of the paddock and rotating them more frequently would help get better weight gain and fertility within those animals."

More to come

Into the future, James expects the trials could uncover more information around how sheep and goats utilise the feedbase, providing exciting new insights for sheep and goat producers.

"The unknowns are exciting when it comes to rigorous research and agriculture – we might actually stumble across something that's phenomenal and enter new levels of understanding, management and profit." ■

SNAPSHOT



JAMES WALKER,
'Camden Park',
Longreach,
Queensland



AREA
8,000ha

ENTERPRISE
Livestock, agri-tourism
and a large solar farm

LIVESTOCK
Breeding and backgrounding cattle,
rangelands goats and Dorper sheep

PASTURES
Gently undulating alluvial downs,
sparsely scattered trees

SOIL
Black self-mulching soil

RAINFALL
Approximately 450mm

SEASONAL ACTION PLAN

📌 **Use MLA's feedbase planning and budgeting tool** to plan grazing rotations as the warmer months approach: etools.mla.com.au/fbrp

📌 **Access information on infrastructure, nutrition** and more for goats in MLA's *Going into Goats* guide: mla.com.au/going-into-goats

📌 **Find more tips for improving pasture utilisation and productivity** at Making More From Sheep: makingmorefromsheep.com.au

👤 Manny and James Walker with their children.



✉ James Walker james@agrhive.com ✉ Joe Gebbels jgebels@mla.com.au

➤ From left, Matt Brown, his wife Maree, their children Alexander and Isabel, Lisa's daughter Harper, Lisa Lonsdale and Lisa's son, Mac.

NLIS at the heart of proving and improving your herd's worth

For Rockhampton beef producer Matt Brown, NLIS tags provide the information he needs to not only verify but progress the genetics and eating quality of his herd for maximum profit.

Together with their business partner Lisa Lonsdale of Lonsdale Agribusiness, Matt and his wife Maree Bowen operate Heartline Grazing – a beef business of 300 crossbred and fullblood Wagyu cattle agisted across 10 properties near Rockhampton and Biloela in Central Queensland.

Guaranteeing genetics

In recent times, Heartline Grazing has placed a concerted focus on verifying the genetics of its herd to attract increased profit – something Matt said has only been made possible through NLIS.

“If every animal we have is individually identified with NLIS tags, we can link each Wagyu’s DNA information to their tag,” Matt said.

“This means as soon as we scan that tag, we can bring up the lifetime data for that animal – including what percentage Wagyu they are, who their mother and father is, and how their brothers or sisters have performed.

“As a result, every Wagyu we have is DNA-verified and we can go to people who want to buy our cattle and show them our herd’s genetic credentials.”

Connecting the dots

By having each animal identified by its NLIS tag, Matt said it was also possible to link carcase performance data back to individual animals within his herd.

“If you can get kill data back and relate it back to individual animals using the NLIS tag numbers, it can definitely help you make management decisions on your genetics and husbandry practices going forward,” Matt said.

“The best way for us to improve our animals on the ground is to look at the carcase data and the characteristics of our herd.”

Improving marbling scores

In particular, Matt hopes that by analysing the carcase data of each individual animal using NLIS, Heartline will be able to select for breeding stock that can produce beef with a higher marbling score.

“For us, eating quality is a massive thing because we want to produce an environmentally sustainable product that tastes good,” Matt said.

“This carcase data, when linked back to animals’ NLIS tags, provides us with the marbling score of individual animals from our herd – feedback which is key to improving the eating quality of our beef.

“We’ll use this information to inform a culling strategy for which females we’ll keep in the herd, and it will also give us direction on what bulls we AI or bring into our herd.”

Staying ahead of the herd

With their herd spread across many properties, Matt said completing livestock transfers on and off properties (PICs) in the NLIS database was the best way for Heartline to keep up to date with herd movements.

Matt encourages other producers to operate a NLIS account if they don’t have one already to not only take advantage of the data it can provide, but also ensure they are meeting their requirements under the NLIS program.

“It’s very important – you need to know what cattle are where, and so does our industry to make sure livestock can be traced through their life in case there’s a food safety issue.

“If you’ve got to use the NLIS database, there are opportunities to embrace that technology and use it to your advantage – if you’re going to collect that data, make it work for your business going forward.” ■

SNAPSHOT



MATT BROWN, MAREE BOWEN AND LISA LONSDALE, Rockhampton and Biloela, Central Queensland



AREA

Livestock agisted across 10 properties

ENTERPRISE

Crossbred and fullblood Wagyu cattle

LIVESTOCK

300 head

PASTURES, SOIL AND RAINFALL

Variable across properties

SEASONAL ACTION PLAN

Learn how to own and operate an NLIS account

using the new Integrity Systems Company (ISC) guide – just scan this QR code.



Access ISC’s other range of how-to guides to help you complete actions in the NLIS database at integritysystems.com.au/nlis-how-to

Sign up to Livestock Data Link to access carcase performance data for animals you have bred or consigned: ldl.mla.com.au

Register with Meat Standards Australia (MSA) to become an MSA-accredited producer: mla.com.au/msa



✉ Matt Brown bb.stockhorses@gmail.com ✉ Don Colantonio dcolantonio@integritysystems.com.au

Five ways to get on top of weeds

Keeping on top of weeds is a key challenge faced by Victorian sheep enterprise, Murnong Farming, but by implementing five simple strategies, feedbase management is now easier and more productive.

Managing annual weeds is a key focus for manager Josh Walter. The weeds of most concern on Murnong include capeweed, corkscrew (erodium), barley grass, silver grass and soft brome grass.

“Increasing the productive performance of our perennial pastures directly affects how well our animals meet their genetic potential – and being a stud, that’s pretty important,” Josh said.

“We put up with a few weeds as long as we can control them and they don’t break us economically – there are weeds that are good value for sheep feed.”

Making choices

Josh uses five tactics to control fast-germinating annual weeds:

1 Increasing grazing pressure

With the need to keep the three sheep management groups separate – and therefore not able to graze as a big mob – Josh realised the best way to control weeds by grazing was to reduce paddock size from above 30ha down to 10ha.

“That’s given us more options – it’s easier to remove 10ha from the system to manage the weeds than it is to remove 30ha,” Josh said.

“In those bigger paddocks, sheep

can graze selectively, so the weeds can take full advantage.”

2 Spray-grazing

When local producer group Southern Farming Systems set up a spray-grazing demonstration in one of Murnong’s paddocks which was dominated by capeweed and barley grass, it inspired Josh to give spray-grazing a go himself.

“We were going to knock down that pasture, put in a summer crop and start again, but the demonstration made us really look hard into managing our pastures differently,” Josh said.

He applied Agritone 750 at a rate of 500ml/ha to a 9ha paddock at the end of July, and was encouraged by the results.

The paddock was stocked with 220 ewes and 312 recently-marked lambs 13 days after herbicide application to remove capeweed leaf. The lambs gained 410g/head/day over 21 days, and the ewes maintained condition score 3, while no scouring or illness was observed.

At the start of Josh’s spray-grazing trial, there was a marginal presence of the original sub and white clover base that had been sown three years prior – but by the end of October, the clover had recovered fully and was setting seed.



Josh Walter at Murnong Farming.

Josh has reaped the benefits year-on-year, with the sub-clover now comprising the majority of the feedbase.

“We learnt that we don’t need to go and start again and waste a whole heap of money.”

Josh is now fine-tuning the timing of spray-grazing, applying it opportunistically when autumn breaks are early and clover has grown three leaves.

Other plans include strengthening pasture by introducing a perennial grass in autumn, rather than attempting to oversow in a summer crop when it is bare in spring after spray-grazing, which impacts the ability of the crop to establish.

3 Stopping weed seed set

In spring, Josh uses three techniques to control seed set – grazing, spray-topping or mowing – which work effectively together to control seed issues in animals.

“We wean 1,000 ewe lambs by November, so we’ve got big mobs that we use to graze down excessive dry matter – although that’s got to be combined with another technique, because if there’s too much choice, they just pick through it and leave all the weeds.

“As a result, we also use either spray-topping to reduce the weed burden of brome grass, or over summer, we mowed a lot of perennial pastures, about 40–50ha.”

He’s seen multiple benefits from mowing pastures, such as controlling weeds, controlling seed set and taking off reproductive heads from perennial grasses to push out the grazing window.

4 Increasing competition

The permanent pasture across the property is Holdfast GT phalaris or perennial ryegrass, with a good base of sub-clover. The remaining balance is either lucerne or plantain.



The impact of spray grazing: on the left, a paddock prior to spraying with 500ml/ha Agritone 750 in July and, on the right, sub-clover in the same paddock in October.

SNAPSHOT



**JOSH WALTER
(MANAGER),**
Murnong Farming,
Geelong, Victoria



AREA
1,200ha

ENTERPRISE
Three sheep studs, breeder
and grower pigs, cropping

LIVESTOCK
2,500 mature ewes, 1,000 ewe
lambs, 500 saleable rams

PASTURES
400ha perennial pasture, 400ha
lucerne/plantain/summer crop, 400ha
winter crop

SOIL
Range from heavy, black clays to
light sand and light loam soils

RAINFALL
Approximately 500mm

The smaller paddocks now support rotational grazing with bigger mobs up until lambing, which is encouraging growth of perennial grasses. Set stocking during lambing helps maintain sub-clover content.

5 Adapting like the weeds

The final lesson Josh has learnt along the way has been around being adaptive and even opportunistic in his weed management.

“In farming, you’ve got to adapt and change – even from 5–10 years ago.” ■

LESSONS LEARNT

- ✔ You don’t have to resow to control weeds – they can be strategically removed from sown pastures.
- ✔ Monitoring paddocks provides direction as to what weed control actions might be required.
- ✔ Use multiple tactics to control weeds.

✔ Weed control: mla.com.au/weeds

✉ Josh Walter
josh@murnongfarming.com.au

✉ Andrew Morelli
amorelli@mla.com.au

Act now to make pastures perform

Knowing how to manage your pastures for maximum productivity all starts with a simple assessment of the feedbase in late winter or early spring, according to Nicon Rural Services consultant, Cam Nicholson.

“Late winter or early spring is usually the time we suggest producers conduct a pasture assessment because most plants will have germinated,” Cam said.

“This will mean you’ll have a pretty good understanding of what you’ve got to go into that spring period – so if you can see 50% of the pasture growing is weeds, clearly there’s a problem with the paddock that you’ll need to sort out.”

Figuring out your feedbase

To better understand the current condition of your pasture, Cam recommends producers use the Pasture Paramedic decision-making tool developed by MLA in partnership with Southern Farming Systems.

The tool can be used to assess the condition of a pasture and identify opportunities for pasture renovation or rejuvenation.

Producers can access the tool by taking part in training designed to assist them to get the most out of it. Training is currently available in the following regions:

- high and medium rainfall zones of southern Australia
- the WA wheatbelt
- northern NSW.

Using the tool’s plastic square to guide the assessment, producers visually examine the contents of desirable grasses, legumes and weeds.

A score for three different indicators of pasture health is collected for each assessment, which are then used to calculate an overall score that reveals the current state of the pasture and what actions could be taken to improve it.

A recording book and technical manual containing useful plant identification tips comes with the kit to help complete



▲ Cam Nicholson conducting a pasture assessment with the Pasture Paramedic tool.

the assessment, with the technical manual also available for download onto mobile devices via a QR code.

Purposes of pasture assessment

While the purposes of the pasture assessment and the pastures themselves vary between regions, Cam said late winter to early spring was an ideal time for producers in all regions to use the tool to see what opportunities were available to improve their pasture performance.

“In the high and medium rainfall zones of southern Australia, producers can use the tool now to assess what desirable perennial grasses and legumes there are, as well as what the dominant weeds are,” Cam said.

“By assessing each of these factors, you can get a score that either suggests you maintain what pasture you’ve currently got because it’s a good pasture, or suggests your pasture needs manipulation or even resowing.”

“If the score indicates your pasture needs manipulation, you will need to take a look at strategies to adjust the soil condition, manage grasses and clovers, or control weeds to improve the feedbase.”

“Meanwhile, if you go to the WA wheatbelt, producers can use the tool to assess their main plant species of cereals and annual rye grass, with this feed supply usually being part of a crop rotation.” ■

For a copy of the Pasture Paramedic tool, you will need to undertake training. To get in touch with a deliverer in northern NSW, the WA wheatbelt or in the medium to high rainfall zones of southern Australia, contact MLA’s Southern Beef and Sheep Adoption Project Manager, Andrew Morelli at amorelli@mla.com.au



- ✔ Find out more about the Pasture Paramedic tool at mla.com.au/pasture-paramedic
- ✉ Cam Nicholson cam@niconrural.com.au ✉ Andrew Morelli amorelli@mla.com.au

Pushing the boundaries with virtual fencing

Initial trials of virtual fencing technology (VFT) conducted as part of the BeefLinks program have indicated the technology could be a viable method for managing beef cattle across the northern WA rangelands and beyond.

BeefLinks is a collaborative research and development project between MLA and The University of Western Australia (UWA) for the WA beef industry.

The second of three trials to be completed at Rio Tinto's 'Hamersley Station' has seen 100 Droughtmaster cows successfully contained within a 500ha virtual paddock, with lightweight collars fitted to the cattle communicating with GPS technology to effectively contain the herd.

BeefLinks Program Leader, UWA Professor Philip Vercoe, said the success of the trials was an encouraging sign that VFT could be used to manage rangeland livestock for maximum productivity, while also ensuring land condition could be maintained for generations to come.

"VFT could play an important part in managing cattle in rangeland conditions to benefit both productivity and landscape health," Philip said.

"We've demonstrated we can effectively contain animals within the virtual fences, using warning sounds to keep animals inside boundaries and a mild electrical stimulus that is emitted from the collars when animals cross a virtual boundary.

"This means you could use the technology for targeted grazing, keeping cattle away from the most sensitive areas of the landscape or placing animals in areas where they might be the most

productive – whatever is going to provide the most benefit to your business."

Collars for dollars

"We observed the cattle regularly after each three-month trial to assess their weight and condition scores and, so far, we haven't seen any difference in those production parameters based on whether cattle were fitted with a collar or not," Philip said.

"There are a number of other technologies available now for cattle that can tell you about their behaviour, movement and grazing times, which can all influence production – and integrating those technologies with VFT is something exciting that's on the horizon."

While the current cost of VFT may pose a barrier to early adoption at the moment, Philip anticipates costs may decrease as the technology continues to develop and the benefits of VFT become more obvious.

"This particular system works by having telemetry towers in place which are a communication link between the collars and satellite, and these towers are a significant part of the cost," Philip said.

"However, all this technology is developing quickly, and so this system could one day move away from using the telemetry towers to instead communicate directly with the satellites, depending on what's most effective."

Future gains

As the technology develops, the ease with which it can be used to monitor and move livestock will also improve, Philip said.

"It's already easy to monitor the cattle and set boundaries to move animals, but I think it'll continue to improve and the benefits of virtual fencing for extensive pastoral systems are only just beginning to be uncovered.

"It doesn't take a lot to get up to speed with the system and you can monitor it as often as you like," Philip said.

"VFT could soon be one of the tools at producers' fingertips to fine-tune their grazing within extensive grazing systems – and there's so much more data we can delve into to inform effective ways to implement it." ■

LESSONS LEARNT

- ✓ VFT could be used for contact-free, low-stress mustering, enabling livestock to be moved during natural disasters when station staff may not be able to access paddocks.
- ✓ Tracking and managing the exact location of livestock across extensive pastoral systems using VFT could ensure optimal use of available pastures.
- ✓ It's essential to stay open-minded about the potential benefits of technologies, to get the most out of new agtech.

SEASONAL ACTION PLAN

- ! Visit mla.com.au/beeflinks for more information on BeefLinks including updates on the virtual fencing technology (VFT).
- ! **Identify where livestock access could be restricted** using VFT by mapping out public roads, rail tracks and other infrastructure on-property.
- ! **Identify paddocks where VFT could be used** to graze down or spell pastures to ensure continued productivity.



↑ The virtual fencing technologies use collars which alert cattle with a warning sound if they approach a virtual boundary.

« Some of the team at 'Hamersley Station', where the virtual fencing technology is being trialled.

Virtually improving labour, costs and welfare



SNAPSHOT



'HAMERSLEY STATION', owned by Rio Tinto, Pilbara region, WA



AREA
250,000ha

ENTERPRISE
Cattle

LIVESTOCK
5,800 head carrying capacity

SOIL
Gravelly clay loams

RAINFALL
300–400mm

Keeping fences up to scratch on a 250,000ha cattle station is no easy feat – but fixing fences on Rio Tinto's 'Hamersley Station' could soon be made a lot simpler with a promising on-property trial of virtual fencing technology (VFT).

Rio Tinto's Manager of Pastoral Stations, Sim Mathwin, said the decision to take part in the BeefLinks VFT trial (see story opposite) was largely driven by the significant time and expense spent maintaining fences on the Pilbara property.

"Fencing infrastructure is expensive to install and takes a lot of ongoing maintenance," Sim said.

"Ideally, Rio Tinto would have effective fences to prevent cattle from accessing our rail infrastructure and mining operations, but it takes a lot of time to do this."

Controlled grazing

Rio Tinto is also keen to explore the potential benefits of virtual fencing for livestock and grazing management.

"Controlled grazing of cattle is a key driver for pasture health, and virtual fencing has the potential to deliver very targeted outcomes, particularly when used in parallel with satellite data," Sim said.

"You can program the fencing collars to move the cattle, and we're looking at options to link the collars to satellite imagery showing feed on offer.

"Where the satellite imagery shows strong pasture from a rainfall event, it's technically possible to program the collars to move the cattle into that area."

Protecting livestock

With animal welfare a top priority at Hamersley, Sim said the prospect of being able to move livestock without

staff on the ground was particularly attractive to the station and other extensive pastoral systems in the north.

"Instead of getting people on motorbikes and horses to muster cattle, programming the virtual fencing collars to move the cattle towards the yards would be a much lower stress style of handling livestock," Sim said.

"Even better, during flooding events like what happened in Queensland in 2019, if you had virtual fencing collars on cattle, you could move them to higher ground or to areas where you've put hay.

"Similarly, if a fire's coming through and you're relying on virtual fences, then cattle could move freely away from the fire, whereas with physical fences, there is a risk of cattle becoming trapped."

A strong start

With the third phase of the trial now well underway at Hamersley, Sim said the results of the research so far have shown great promise for producers.

If the technology was to be approved for rollout to broader industry, Sim envisions it would serve as a vital tool for producers seeking to refine their herd management.

"In the future, producers might put collars on all their best breeders so they know exactly where they are and can manage the breeding of their cattle," Sim said.

"They could also put them on dry cattle such as steers if they really want to earmark a certain area of their station for targeted grazing."

The sky's the limit

With an eye on the future, Rio Tinto is committed to investing in technologies that will improve cost and operational efficiencies – and Sim encourages other producers to stay open to the opportunities presented by technology.

"It's still early stages with virtual fencing, so you have to be open-minded when thinking about the potential benefits.

"If you look at the scale of cattle stations, if you can know where your cattle are and control your grazing using virtual fencing, then this technology has to be a good thing.

"You still need to be realistic about your capacities at the moment and the current accessibility of the technology – but imagine if you could do these things, how you could run your station." ■



Five clues goat worms are a problem

For goat producers, effective parasite control is essential to maintaining a healthy herd – and according to goat-only veterinarian, Dr Sandra Baxendell, keeping worms in check within your herd can be as simple as looking out for five key symptoms.

Producers should monitor the following to detect worms in their goat herd:

1. General body condition
2. The coat – it should be sleek and not rough
3. Signs of scouring
4. If the goat has a high FAMACHA® score¹
5. Bottle jaw, which is a sign of a severe and often fatal worm infection.

Staying alert

Worms are particularly prevalent right now, but Sandra recommends a year-round approach to monitoring your herd for internal parasites.

“If pastures get very short at any stage, then goats will be eating more worm larvae, as it’s easier for worm larvae

to swim up the pastures to the top where the goats graze,” Sandra said.

Her advice is to conduct frequent worm egg counts to determine worm levels and, at least once a season, take larval cultures to find out what species of worms are on your farm at that particular time of year.

Reducing resistance

Before treating affected goats, Sandra recommends producers make sure the drench product they plan to use will be effective for their animals.

“If producers can’t do a drench resistance check or DrenchTest because they’ve only got a small numbers of goats, they’ll have to do what’s called a DrenchCheck each time they open a new drench container, just before they finish that drench container



Goat-only veterinarian and Director of Goat Veterinary Consultancies, Dr Sandra Baxendell.

and before they buy another,” Sandra said.

“A DrenchCheck involves taking worm egg counts from individual goats before drenching and 14 days after drenching, to check that there has been a 95% reduction in the worm egg counts – which proves the drench they’re using is effective.

“There’s no point in buying another pack of the same drench if it’s not working on your farm, and every farm’s different.”

Visit WormBoss – wormboss.com.au – for more information on checking for drench resistance.

Seek veterinarian advice

Consulting a veterinarian is another essential step to ensuring the effectiveness and safety of treatments on-farm.

Guide to getting goat worms under control

Preventing worms

- Graze horses and adult cattle on pastures where goats are to be grazed, as these animals eat worm larvae.
- Keep pastures as tall as possible.
- If using feeders, ensure goat feet or manure can’t get into feeders and contaminate feed with worm larvae.
- Fodder crops and hay stubbles are the best pastures for grazing goats on to avoid worms.
- Use FAMACHA® scores and faecal worm egg counts to genetically select goats that are more resistant and resilient to worms.
- Focus on providing goats with energy and protein.

When to watch for worms

- Worms are particularly prevalent in humid conditions or in goats with other diseases.
- Does in late pregnancy or early lactation are high egg producers so keep them separate from other susceptible livestock during this time.

Detecting worms

- Bottle jaw, severe anaemia and poor coat are all clinical signs of barber’s pole.
- To determine if goats need drenching, check the animal’s eyes for anaemia, and monitor for soiling of the tail, bottle-jaw (swollen under the jaw) or poor condition.
- Drench kids or goatlings that are not meeting their average daily weight gain targets or have a FAMACHA® score of 3, 4 or 5.
- Drench does in late pregnancy or early lactation if they have a FAMACHA® score of 4 or 5, have more than three kids on ultrasound or born, have a body condition score of only 1 or 2, are a first kidder.
- Drench goats of any type that have a worm egg count above that listed in the drench decision guide for your district or state.

Treating worms

- Only treat goats that require treatment, as outlined above.
- Identify the worms affecting the goats and treat for those worms.
- Check drench gun before use.
- Drench over back of goat’s tongue.
- Ideally use a combination of anthelmintics from several different classes of actives.
- Observe withholding periods (WHP) and export slaughter intervals (ESI) for drench products used.
- Only use products registered for use in goats or get a veterinarian prescription for any off-label use of drench products on goats.

Preventing drench resistance

- Conduct a drench resistance test every 2–3 years.
- Only drench goats that require treatment.
- Return drenched goats back to the same pasture after treatment. ■

“You must use products registered for use in goats or get a prescription from a veterinarian to use drench products for sheep or cattle on your goats,” Sandra said.

“I recommend getting a veterinarian's prescription for using drenches even if it's actually registered for use in goats, as you may be advised to use it at a higher dose rate than on the label.

“With a prescription, you can also use combination drenches, which you should use because it's more unlikely that worms can mutate to survive drenches from different families at the one time.”

A veterinarian is also integral to a holistic management strategy, which Sandra said is the most sustainable, cost-effective solution to keeping worms under control in goat enterprises for the long term.

“I recommend that producers get their veterinarian to have a look at their property, what other livestock they've got and the options available, and do an individual worm plan for their particular farm,” Sandra said.

“There's nothing like having an expert who knows a lot about worm control looking at the farm and seeing opportunities to use grazing management and other tools to try and control the worms rather than just relying on the drenches.” ■

*FAMACHA® is a system of scoring the eye mucous membrane colour to identify animals that are anaemic due to barber's pole worms.

SEASONAL ACTION PLAN

! **Consult your veterinarian for advice on internal parasite management**, including testing and treating your goat herd for parasites such as worms

! **Visit the ParaBoss website** for more practical tips and tools to manage internal parasites in goats, paraboss.com.au

! **Use the Safe and responsible animal treatments fact sheet and checklist** to make sure you are treating livestock in accordance with your Livestock Production Assurance (LPA) requirements – scan this QR code to access it.

! Information on conducting DrenchTests and DrenchChecks are available at wormboss.com.au



Goats at the University of New England during the research project.

Watch out worms: new study into parasite control in goats

New information on off-label use of drench for goats is being released to veterinarians as part of an MLA-funded project that seeks to encourage safe, cost-effective parasite control within the Australian goat industry.

With goats largely unable to develop a strong age resistance to worms, internal parasites are a major issue faced by Australian goat producers.

According to project lead and University of New England senior lecturer, Dr Emma Doyle, this issue is compounded by the lack of effective drenching products registered for use in goats – a problem the project sought to address by investigating viable off-label drench options for goats.

“There's a good proportion of goat producers using sheep and cattle drench products off-label due to the ineffectiveness of goat drench products on the market – but they don't know the effectiveness of the chemicals they're using,” Emma said.

“Without a knowledge of what's effective, or what's safe, you don't know which chemical to use to get the best outcomes for your livestock.”

Through a series of four trials, the project tested seven sheep and cattle drenches (anthelmintic treatments) on Boer and dairy goat breeds to produce a range of powerful insights into viable drench options for goats.

“We found effective dose rates for six of those treatments for use in goats. For those six treatments, we were also able to determine the withholding period for goats who have been treated with those products.

“The seventh treatment – Moxidectin pour-on drench – was found to be totally ineffective on certain species of worm, and we generally discourage the use of this product on goats.”

Emma said establishing the correct dosage rates for the off-label use of these treatments will prove key to safe, sustainable and cost-effective worm management in goat herds.

“If you're not using the correct dose, there's going to be a huge cost to your production,” Emma said.

“You're either spending too much money putting too much drench down the animal's throat or you're going to be causing a huge problem on your property by not using enough of the correct dose, which will encourage drench resistance.

“Not using the correct dosage of drench can also lead to a violation of maximum residue limits in your goat meat products, which would restrict your market access.” ■



For more information about the UNE project and its findings, contact paraboss@une.edu.au

Emma Doyle edoyle3@une.edu.au Sandra Baxendell goatvetoz@gmail.com Joe Gebbels jgebbels@mla.com.au

Starting early the key to smooth succession

The first article in our succession planning series looked at the roadblocks to succession planning – if you missed it, scan this QR code or check out the Autumn 2022 edition of *Feedback*, page 14. In this second instalment, we explore the financial side of succession planning.



When it comes to farm businesses, starting conversations around succession early is key to achieving the best outcomes for the whole family.

According to the succession planning specialists at Proagrive, farming families taking a well-rounded, proactive approach to succession are far more likely to create fair and favourable opportunities for all parties involved than those that leave it until further down the track.

Finding out the financials

Proagrive's General Manager, Jess Cavanagh, said good succession planning starts with taking stock of the financial performance of the business early on to understand what's possible into the future.

"Families need to consider the historical financial performance of the business, as well as what its scope is to produce into the future," Jess said.

"It's also important to distinguish between these two aspects – just because the business has performed a certain way in the past, doesn't mean that with some help it can't perform better in the future."

In particular, Jess said unlocking new opportunities for parents and children can be made possible if the current and future performance of a business is determined early on in the process.

"The financial performance and viability of a business will have a huge impact on succession planning, as it allows a lot of flexibility to create opportunities – for parents who need to facilitate a retirement strategy, for the next generation continuing on in the business, and for the next generation who have chosen other paths," Jess said.

"Having the desire and opportunity to create early opportunities for children who are choosing to not be involved in the family business goes towards creating some level of fairness between siblings."

Planning for profit

Understanding business performance also allows families to adjust their business plan to ensure its profitability into the future as the succession plan comes into play.

"By taking a look at your business performance early on, you can also create a lot of scope around what the future of the business might look like," Jess said.

"This could be expansion – if the business is financially producing in a way which allows it – or it could involve significant improvements or changes to the way the business is run, because often opportunities are identified outside of the current business model."

A comprehensive business plan that considers a range of business purposes – from financial to personal – is essential if families want the business to succeed into the future.

"When we talk about the future of the business and succession, a business plan that falls inside a succession plan is really integral to achieving whole family outcomes," Jess said.

This business plan needs to consider financial, personal, production and even environmental goals.

"Families who engage in succession planning are making a conscious decision for the business to continue on to the next generation, and consideration of these factors assists in allowing this to happen."

According to Jess, defining the current and future state of the business sooner rather than later also gives families the time they need to build the business to its full potential and execute their business and succession plans well.

"The earlier families engage in conversations, the longer they have to achieve their financial and non-financial goals," Jess said.

"For parents, this means they can really spend the time they need to build a financial bucket for retirement."



Proagrive's General Manager, Jess Cavanagh.

Every voice counts

Understanding that each family member needs to voice their unique goals and visions around the business is critical to laying solid succession plans.

"We have the best success when families reach a vulnerable place and share what's really important to them," Jess said.

"The purpose of the business to a family member not directly involved in its operation is going to be completely different to someone who is engaged in the business.

"Once we can assess what's important to each family member, building outcomes to support those priorities is possible.

"That's why with families who have great communication – or an ability to

"The financial performance and viability of a business will have a huge impact on succession planning, as it allows a lot of flexibility to create opportunities."

transform the way they communicate with each other – we can help to facilitate great outcomes.”

Start talking

Starting the conversation now around succession can play a vital role in ensuring the best possible outcome can be achieved for every member of the family.

“Parents deserve to have the retirement they would like to have – they’re the reason why we’re here having this conversation, and why the next generation gets an opportunity to be involved in the business,” Jess said.

“Starting the conversation early means there’s lots of time to build opportunities for all family members, whether their chosen career means playing a part in carrying out the family farming legacy or not.” ■

LESSONS LEARNT

- ✔ **Reflect:** understanding the current and future performance of the business can help identify early opportunities for family members within and outside of the business.
- ✔ **Plan:** a solid business plan is an essential part of any succession plan.
- ✔ **Talk:** starting honest conversations early ensures positive outcomes for all family members.

SEASONAL ACTION PLAN

- ! **Set yourself up for effective financial relationships** and grow your business – sign up to the next Lender Ready Program at abdi.com.au/lender-ready-programs
- ! **Enhance your knowledge and skills in basic financial and business management** to improve business efficiency and profitability through MLA’s Business EDGE – a two-day financial and business management training workshop for livestock producers: mla.com.au/edge-network
- ! **Learn more about the fundamentals of succession planning** at mla.com.au/succession-planning
- ! **Brush up on your people management skills** with free resources for employees and employers at peopleinag.com.au

“That’s why with families who have great communication – or an ability to transform the way they communicate with each other – we can help to facilitate great outcomes.”



✉ Jessica Cavanagh jess@proagtive.com.au

✉ Josh Whelan jwhelan@mla.com.au

✓ A dense infestation of the riparian weed *Parkinsonia* at a dam on Alexandria Station, in the NT's Barkly region.

Pushing 'bak' against *Parkinsonia*

Producers have a tool in their arsenal to control the invasive riparian weed *Parkinsonia* across northern Australia with the biological herbicide, Di-Bak *Parkinsonia*, but effective control needs the right approach.

Here, plant pathologist Professor Vic Galea provides an insight into how producers can tackle dense swathes of *Parkinsonia* which present productivity challenges such as limiting pasture growth, restricting stock access to pasture and water points, and increasing mustering difficulty and cost.

The Deputy Head of School at the University of Queensland's School of Agriculture and Food Sciences has spent more than 16 years investigating dieback disorders of invasive woody weeds in the Australian

landscape, including *Parkinsonia*.

His work resulted in the development of Di-Bak *Parkinsonia*, developed with MLA support, and the establishment of a start-up company, BioHerbicides Australia (BHA).

Di-Bak *Parkinsonia* is a biological herbicide containing naturally occurring native fungal pathogens. These are delivered in capsules implanted directly into the trees using specially developed delivery technology, enabling targeted application.

"*Parkinsonia* populations often develop dieback, so it's a natural disease," Vic said.

"PhD student Naomi Diplock and I started investigating this in 2005, and MLA joined in to extend this research in 2009. We found it was caused by fungal organisms that infect the plants and kill them.

"Naomi's research also found that dieback spreads through *Parkinsonia* populations via the soil and root system contact, or through overland water flows." ■

Planning your control strategy

Step 1 Understand how the problem spreads

Professor Galea said that before using any control measures, producers need to understand how *Parkinsonia* plants spread.

The three main avenues of seed spread are:

- cattle grazing on *Parkinsonia*, leaving a trail of seeds as they move
- overland water flows carrying seed pods
- during transportation of cattle from station to station.

"*Parkinsonia* likes riparian zones, so you'll find it around areas such as ring tanks, creek lines, soakage points, dams, riverbeds and riverbanks," Vic said.

"It drops pods on the ground that then move downstream.

"It can spread through cattle grazing and picking up the pods and ingesting the seeds."

Long-distance spread can occur when cattle come off properties with

Parkinsonia onto clean properties and purge *Parkinsonia* seeds from their gut.

Step 2 Assess the level of infestation

As well as the new bioherbicide, there are a range of chemical options for the control of *Parkinsonia* – the best option depends on the individual situation.

Sometimes, chemical control is preferable, however herbicides will only kill those plants onto which it is directly applied.

"It really depends on your level of infestation. You need to determine how big (and dense) a *Parkinsonia* problem you have," Vic said.

He advises producers develop a detailed map of infestations on their property and the density of these infestations, before deciding on a control approach. This can be created using aerial or satellite imagery and 'pinning' locations using GPS to map where infestations occur.

"For fairly light infestations or just scattered plants, the best approach is to clean them up using herbicides," Vic said.

"If you have 1ha with 10 plants on it, I



▲ An operator using the injection equipment to implant a capsule of Di-Bak *Parkinsonia* into the stem of a tree.

wouldn't advise you treat every plant with a bioherbicide. Even though it will take you the same amount of time to apply the treatment, the bioherbicide takes longer to kill the plants. The chemical herbicide is a more rapid approach."

Because Di-Bak *Parkinsonia* is a living pathogen that spreads throughout populations via soil, root systems and overland water flows, it's the ideal option for extensive or heavy infestations.

It's important to understand the way water flows across your property, so you can aim to treat the plants upstream.

"When you have very dense infestations, you cannot treat every tree with a chemical herbicide," Vic said. ■

» This article is the first of a series on *Parkinsonia* control. The next instalment will take a more in-depth look at *Parkinsonia* control options.

- 📍 Use MLA's weeds hub to access resources for improved productivity: mla.com.au/weeds
- 📍 For more information on BioHerbicides Australia visit bioherbicides.com.au
- 📍 Learn more about ADAMA Injecta Di-Bak technology at au.campaigns.adama.com/injectadibak
- ✉ Professor Vic Galea v.galea@uq.edu.au
- ✉ Cameron Allan callan@mla.com.au

Biocontrol reins in Parkinsonia

Weed control has been a long-term focus at one of the nation's largest cattle stations, 'Alexandria Station', in the NT's Barkly region.

The station was home to a Parkinsonia control trial in 2016, run by University of Queensland's Professor Vic Galea, to test the effectiveness of a bioherbicide developed with the support of MLA (see story opposite).

The resulting commercialised product – Di-Bak Parkinsonia – utilises naturally occurring fungal pathogens that initiate dieback in the plant. The fungi are stored in capsules and injected into Parkinsonia plants using a specially developed delivery technology, which drills into the stems, places the capsules then plugs the hole.

Steve Drury, who manages Alexandria for the North Australian Pastoral Company (NAPCo), said Parkinsonia has always been on the station.

"It had been treated, but it was such a huge area," Steve said.

Traditionally it was treated using diesel. using diesel and Access® (active ingredients Triclopyr and Picloram) or diesel and Starane® Advanced (foliar, active ingredient Fluroxypyr).

"We have mesquite as well, but Parkinsonia is a particularly bad weed for us because it's so invasive. We'd been getting contractors in from Katherine. We do a lot of aerial surveillance and put a GPS pin on the map for them to locate the infestations."

The right conditions

Understanding how Parkinsonia spreads is one of the keys to effective control.

Parkinsonia is a riparian weed, although it can establish away from waterways. On Alexandria Station it's isolated around waterways and turkey nests, as well as in patches on the Playford and Rankin rivers.

Steve is also mindful of some significant areas of Parkinsonia infestation on other areas which have potential to worsen.

Although water flows from Alexandria Station into the neighbouring property 'Mittiebah', it hasn't established there. Mittiebah manager Marty Doyle believes this is due to that station's poorer soils, which are phosphorus-deficient, self-mulching cracking clays, running into rocky spinifex country and hard limestone.

Alexandria Station also has black, self-mulching cracking clays, but unlike Mittiebah, it has good phosphorus levels.

Bioherbicide control

Professor Vic Galea's research with Di-Bak Parkinsonia was conducted on an 11ha area of Parkinsonia at Alexandria's 'Gallipoli Outstation'. As is typical for Parkinsonia, the infestation was located around a dam and its immediate catchment area, where cattle travel and congregate.

The study, which began in August 2016, covered two areas of an estimated 40,000 dense and healthy Parkinsonia trees which were free of dieback.

Steve said the effectiveness of the bioherbicide was deceptive at first as he didn't notice the herbicide was working.

"I was actually tempted to get in and poison it, because it didn't seem to be working quickly enough – but I knew I had to trust the process."

A couple of years on and Steve needed no convincing.

"The bioherbicides have tidied up the problem for us. You only need to treat every few plants, and it's got the problem licked."

SNAPSHOT



STEVEN DRURY (MANAGER),

'Alexandria Station', Barkly region, NT, owned by the North Australian Pastoral Company (NAPCo)



AREA

1,640,000ha

ENTERPRISE

Producing weaners for NAPCo's Queensland properties, breeding composite bulls, hay production

LIVESTOCK

80,000 head

PASTURES

Mitchell grass

SOIL

Black cracking clay

RAINFALL

480mm

The work of Vic and his team means all that remains on the station are some scattered plants.

"If we found another dense area we'd certainly use [Di-Bak] again, but currently the existing plants are not thick enough or established enough to warrant it. On those remaining plants, we will just use chemical control as needed." ■



Manager of Alexandria Station Steve Drury (left) with his neighbour Marty Doyle, who manages Mittiebah Station, at the Northern Territory Cattlemen's Conference. Alexandria Station was the site of Professor Vic Galea's bioherbicide trial.

LESSONS LEARNT

- ✔ With weed control, it's best to nip problems in the bud, before they get a chance to get away. We do a lot of aerial surveillance.
- ✔ When using Di-Bak Parkinsonia, you only need to treat every few plants.
- ✔ Trust the process and be patient. The research team treated a patch at the southern end and let it go, then over the next five years it slowly spread. It did what we thought it would do.



Steve Drury sdrury@napco.com.au Cameron Allan callan@mla.com.au

Three steps to buy better bulls

Bull sales are gearing up across northern Australia and, in the face of seasonal challenges and market demands, the integrity of high-performing sires has never been of greater importance for profitable beef businesses.

Here are three steps producers can take to optimise their sire purchases and ensure the bulls they invest in are fit for the job.

1 Know your herd and set clear breeding objectives

Before you even open the catalogue for this year's bull sales, take a step back and consider your own herd and your breeding objectives for the future.

Analysing your environment (including factors such as feed availability and climate), target markets and profit drivers provides a baseline of your herd's existing attributes – you can then use this information to identify what genetic traits to add to improve overall productivity and profitability.

Breeding objectives should correspond

to individual business requirements, such as resilience to specific environment, fertility for increased production and market compliance.

Use this information to match the bulls on offer against the traits you need to accelerate genetic gains in your business.

2 Make sure health checks have been conducted

Along with your own objectives, and a physical assessment on the day, a sound sire investment includes accredited veterinary checks. The Bull Breeding Soundness Evaluation (VBBSE) is an indicator of a bull's fertility, with extensive tests on mating ability, sperm morphology, as well as physical deformities that may affect breeding capacity or offspring health.

3 Research breeding values and indexes

While a bull's ability to reproduce is, of course, crucial, the genetic gain of their offspring is also vital to the productivity and profitability of northern beef herds.

Here's where Estimated Breeding Values (EBVs) come in, as an

SEASONAL ACTION PLAN

1 Check out MLA's Genetics Hub for information on the difference genetics can make to tropical beef herds:

genetics.mla.com.au/tropical

2 Learn more about the Bull Breeding Soundness Evaluation BULLCHECK at bit.ly/BULLCHECK

3 Find out more about Australia's genetic evaluation system for beef cattle breeders and buyers, BREEDPLAN, at breedplan.une.edu.au

important tool to predict the traits that will be passed to progeny.

EBVs are determined through an analysis of various trait data collected from the cattle in the bull breeder's herd. These include weight, temperament and fertility rates. They are also informed by the performance of relatives of that bull and, for some breeds of cattle, genomic information contributes to EBVs.

As an additional guide, selection indexes provide an overall score of the profitability and quality of a bull based on its EBVs in relation to its profitability within a given production system.

By researching a bull's selection index, you will be able to gain a broader understanding of its genetic traits and whether they align with your breeding objectives. ■

Five videos to guide bull buying



Getting started with breeding values

genetics.mla.com.au/tropical

In this module, three short, animated videos tackle how to use breeding values to achieve genetic gain in tropical beef businesses, including what EBVs and selection indexes are, and how to set a breeding objective for your herd.



Using breeding values to select for traits

genetics.mla.com.au/tropical

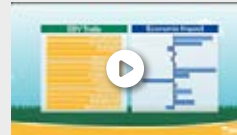
This module features a detailed understanding of how EBVs can be analysed and used to better predict the value of a bull, and how that can translate to your specific breeding objectives.



Using breeding values to find bulls on BREEDPLAN

genetics.mla.com.au/tropical

This module provides a step-by-step guide on how to use the BREEDPLAN website, and how it can be used to find sale catalogues, EBVs and information on breeds and bulls that match your breeding objectives.



Putting breeding values into practice

genetics.mla.com.au/tropical

This video provides practical tips on every stage of the sale, including research to undertake prior, steps to take during the sale, and documentation to complete after purchase.



How to do a Bull Breeding Soundness Evaluation

youtube.com/FutureBeefAu

Veterinarian Jo Connolly explains the process of a Bull Breeding Soundness Evaluation (VBBSE), as well as other examinations that are conducted to determine the fertility and health of bulls.



✔ MLA Managing Director Jason Strong watches the MEQ Probe in action, as it measures the amount of intramuscular fat (IMF) of a lamb carcass. Image: Brett Naseby Creative

Red meat technologies top the grade

In a world first, MLA and Gundagai Meat Processors (GMP) have brought together a range of advanced technologies to grade and sort lamb based on consistent eating quality, yield and health.

It follows more than 10 years of research to develop technologies that provide a unique approach to processing, and stands to revolutionise the Australian sheepmeat industry and support value-based payment systems.

GMP have installed technologies to determine lean meat yield and intramuscular fat (IMF) – traits which, when combined with hot carcass weight, will lead to a Meat Standards Australia (MSA) cuts-based eating quality prediction, once commercialised.

It positions GMP as the first processor in Australia to market lamb based on eating quality attributes valued by the consumer.

MLA's General Manager of Research Development & Adoption, Michael Crowley, said it's an exciting development for the grading of lamb and ultimately sheepmeat within Australia.

"The commercialisation of the MSA sheepmeat cuts-based model has the potential to incentivise and reward producers by creating opportunities to boost profitability and productivity based on the needs of the consumer," Michael said.

In addition, this new model offers the opportunity for processors and brand owners to segment their production based on eating quality, allowing them to develop and market their brands and products to better meet the needs of the customer and generate increased returns.

Technology in action

Will Barton, Chief Executive Officer at GMP, said the MLA-supported technologies which have been installed and validated at GMP now enable the grading of lamb carcasses supplied from their producers.

The MSA sheepmeat cuts-based model uses three measurements on each carcass:

- > hot carcass weight
- > lean meat yield
- > intramuscular fat.



The MSA model, which will soon be commercialised, will then predict the eating quality of nine cut by cooking method (grill and roast) outcomes for each carcass.



✔ The MEQ Probe uses spectral imaging to measure the amount of intramuscular fat in lamb carcasses.

"We're really excited to commercially validate these world-first grading techniques right here in Gundagai," Will said.

"Importantly, these technologies enable the development of value-based payment systems based on eating quality and other attributes desired by consumers to incentivise continual on-farm improvement in lamb production."

» Continued next page.

« Continued from previous page.

Feedback for producers

These technologies and feedback systems allow for greater transparency and communication with producers and underpin better collaboration between processors and producers, resulting in healthier and higher quality livestock prior to processing.

“We’ve already started using producer payment systems based on quality attributes measured by the system,” Will said.

“Our lamb producers want only to produce the best quality products. By providing them with the data and feedback through these technologies, they’re able to review their production systems to supply us with a consistent product every time.

“My message to sheep producers and processors is to get in touch with MLA and find out more about these technologies – the sheepmeat revolution is underway and we’re very excited for the future of our industry.”

These technologies and systems ultimately aim to produce a

more consistent, higher quality of lamb and sheepmeat despite variable climatic conditions, breeds and production systems.

“Reducing variability and providing a more consistent and improved eating quality in our lamb will help our producers stand out from the pack and provide an excellent, consistent offering for consumers,” Will said.

MSA Program Manager David Packer said the new technologies pioneered at GMP have potential to extract further value for the sheepmeat industry.

“By implementing and using these technologies, GMP will be the first processor in Australia to market lamb based on eating quality attributes valued by the consumer,” David said.

“The MSA model will allow processors and brand owners to underpin their brands with consistent eating quality, providing opportunity for extracting further value. Additional opportunities may also come from utilising the range of different cut by cooking method outcomes.” ■

The technologies and methods rolled out at GMP include:



DEXA (dual energy x-ray absorptiometry): an objective measurement tool to

assesses lean meat yield, bone and fat composition of each carcass.



MEQ Probe: a needle probe that uses spectral imaging to measure the amount of

intramuscular fat (IMF) in lamb carcasses.



MSA grading: uses hot carcass weight, lean meat yield and IMF to predict a quality score

for nine cuts by grill and roast cooking methods, for each carcass.



Health 4 Wealth: a standardised approach to the collection and feedback of animal disease

and defect data to producers.



RFID (radio frequency identification) hook tracking:

embedded in processing gambrels which are read to provide individual carcass tracking and sortation.



Feedback to producers: systems which communicate the performance of individual animals in the

consignment against the target specification.



“Importantly, these technologies enable the development of value-based payment systems based on eating quality and other attributes desired by consumers to incentivise continual on-farm improvement in lamb production.”

▲ Gundagai Meat Processors Chief Executive Officer Will Barton (on right) takes sheep producers Hamish Dickson and Isabele Roberts and MLA Managing Director Jason Strong on a tour of the processing plant. Image: Brett Naseby Creative



- ✉ Michael Crowley mcrowley@mla.com.au
- ✉ David Packer dpacker@mla.com.au
- ✉ Garry McAlister gmcalister@mla.com.au
- ✉ Will Barton wbarton@gmpgundagai.com.au

Creating value from paddock to plate

The carcass grading technologies at Gundagai Meat Processors (GMP) will deliver benefits throughout the supply chain.

It paves the way for detailed feedback from processors to producers to support better decision making on-farm. At the other end of the supply chain, the ability for greater consistency and product segmentation based on quality will create options for retailers and foodservice providers in their business. Here's a look at what this new technology means from paddock to plate.

The producers

Valuable feedback

NSW producers Hamish Dickson from Crown Agriculture, Orange, and Isabele Roberts from Ridgehaven Poll Dorsets, Cudal, supply lambs into GMP's Gundagai Lamb brand.

For Hamish, the new technologies at GMP allow for more data to be provided back about their production systems and the consistency and health of their animals.

"What's especially interesting to us is that Gundagai Lamb can let us know what parts of our production systems are impacting eating quality, allowing us to rectify or amplify those aspects that generate consistently high quality lamb products," Hamish said.

"Gundagai Lamb were able to give us a



Gundagai Lamb suppliers Hamish Dickson and Isabele Roberts. Image: Brett Naseby Creative

baseline of the quality of our lambs, which has been extremely beneficial, as we didn't have that before. Using that baseline, we can make improvements around feeding regimes, genetics and other selection and management decisions we make on-farm."

Isabele said supplying Gundagai Lamb means they can measure the quality of what they produce, not just the quantity.

"Up until these technologies were rolled out, lamb was purely measured on the quantity – the weight of the lamb determined price paid. Now we can get an important quality variation around lean meat yield (LMY) and intramuscular fat (IMF) within those lambs," she said.

"As a result we get paid a higher value for the premium quality carcass."

Although the process at GMP is still in its early stages, both producers are already using this feedback in their on-farm decisions.

"The quality measurement we receive from Gundagai Lamb really helps our decision making around genetics for our Poll Dorsets here at Ridgehaven," Isabele said.

"From a genetics point of view, we aim to balance our production traits with carcass traits. The individual carcass data provides an understanding of how our genetics are performing for the critical carcass traits of LMY and IMF. This then allows us to make really targeted decisions on-farm."

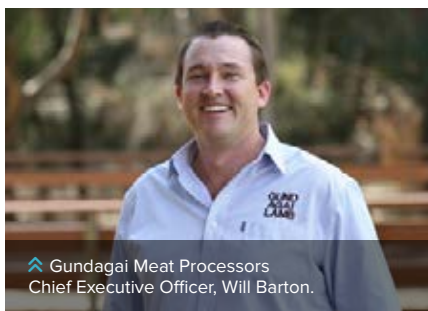
The processor

Profitable segmentation

For lamb processors, this technology will enable the MSA sheepmeat cuts-based model to predict the eating quality of the cuts across the carcass, in line with MSA in the beef industry.

Once commercialised, the MSA sheepmeat cuts-based model will enable processors to segment their production based on eating quality, so they can develop and market their brands and products to better target the needs of the customer.

"The data we are now able to extract from a carcass allows us to develop different products that can better serve customer specifications and generate increased returns," Will Barton, Chief Executive Officer at GMP, said.



Gundagai Meat Processors Chief Executive Officer, Will Barton.

"Importantly, these technologies help to maintain a standard of consistency in eating quality, because we're able to accurately identify IMF levels and LMY from each carcass."

"This consistency is a game changer, because now we can market consistent high-quality lamb to our customers all year round."



Jason Staudt, Executive Chef at Stokehouse on St Kilda Beach, Melbourne.

The chef

Reliable quality

The sheepmeat model will enable prediction of the MSA eating quality score for nine cut by cooking method outcomes (grill and roast) for each carcass:

Grilling	■ knuckle	■ rump
	■ loin	■ topside
Roasting	■ knuckle	■ loin
	■ leg	■ shoulder

Consistent eating quality is something Jason Staudt, the Executive Chef at Stokehouse on St Kilda Beach in Melbourne, is excited to see.

He said the consistent eating quality enabled by the MSA sheepmeat cuts-based model has potential to revolutionise how restaurants consider lamb on their menus.

"Traditionally, the lamb we receive would be famously tender and juicy one year, and potentially tough and too lean the next," he said.

"That was the perception of lamb, that it was high quality, but not consistently high for a premium restaurant to confidently serve given the cost."

Since signing up with Gundagai Lamb last year, Jason and his team have found their lamb is a lot more delicate and lighter in flavour than previous providers.

"But the key difference is that Gundagai's lamb is consistently high quality."

"This means the world for restaurants like ours, as it's something we don't need to worry about – we know it's going to be amazing every time. We're even going to put it on our events menu because of that reliability. It's an absolute game changer."



Stokehouse's rolled Gundagai Lamb saddle.

Virtual reality in ship shape

If you've ever wanted to see what it's like onboard a live export ship, you can now experience it through virtual reality.

The Australian livestock export industry has launched a virtual tour of a ship, developed by the industry's research body LiveCorp and not-for-profit The Livestock Collective.

It provides the opportunity to look around the pens holding sheep and cattle via 360-degree videos.

The tour also includes access to other parts of the ships, with links to videos and other resources providing information on the preparation and behind-the-scenes management of livestock.

LiveCorp Chief Executive Officer Wayne Collier said industry surveys have shown that many Australians have questions about conditions for livestock on the ships.

"Our research into community sentiment about livestock exports tells us that people recognise the contribution of the trade to the economy and its importance to people's diets in other countries," Wayne said.

"However, they're also concerned about animal welfare, including what happens during sea voyages. This website sheds more light on the management of the livestock and will hopefully provide some answers."

The Livestock Collective Managing Director Holly Ludeman said the virtual tour will allow people from all over the world to see conditions on livestock ships for themselves.

"One of the most rewarding projects when The Livestock Collective started, was to organise tours on livestock ships for farmers, politicians and media," Holly said.

"It provided an opportunity to get a feel for how the sheep and cattle are housed, fed and watered, and ask any questions of people who work on the ships and within the supply chain.

"With COVID preventing the continuation of tours, this is the closest thing to being on a ship.

"It also allows us to reach a much greater audience." ■

New tool to drive live export decisions

MLA recently launched a new independent price indicator to assist the live export industry to make more informed decisions and drive profitability in northern Australia.

The Live Export Price Indicator (LEPI) was developed in consultation with industry following the need to provide greater coverage of pricing trends to producers and participants throughout the supply chain in the northern cattle industry.

MLA Managing Director, Jason Strong, said the live export industry played a pivotal role in the livestock sector in northern Australia.

"The Northern Territory currently accounts for about 10% of the total national cattle herd, so it's important that the live export industry has a measurable pricing indicator made available by an independent source rather than rely on anecdotal information," Jason said.

"The new LEPI will provide relevant, timely and independent information to support the live export industry to make more informed business decisions through connected data.

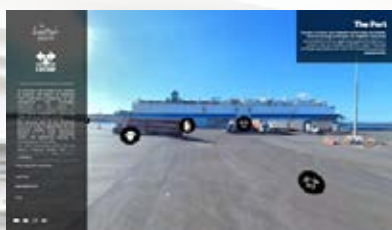
"Critical to the process was the consultation with livestock exporters who contribute their data to the Northern Territory Livestock Exporters Association (NTLEA) and providing regular updates on the indicator's performance, its accessibility and accuracy."

The LEPI is the average sale price of male feeder cattle purchased by exporters for shipment via Darwin to Indonesia, released every second Tuesday for the previous fortnight.

All data shown in the LEPI has been provided by livestock export companies active in the feeder cattle trade to Indonesia.

The LEPI is generated on the sale price of male feeder cattle, both castrated (steers) and entire (bulls), shipped for export from Darwin to Indonesia, weighing 280–380kg live weight (lwt). The indicator price is reported on a cents-per-kilogram lwt basis and in Australian dollars (AUD), in line with established terms of the trade.

The LEPI's performance will be reviewed based on feedback from producers, users, exporters and industry. ■



Register for the livestock export industry's LIVEXchange conference in Darwin on 9-10 November, at livexchange.com.au Follow the live export process through a virtual reality tour at thelivestockcollective.com.au/vrshiptour

Karen Latham klatham@livecorp.com.au David Beatty dbeatty@mla.com.au

To access MLA's market information, including the new Live Export Price Indicator, visit mla.com.au/prices-markets

Stephen Bignell sbignell@mla.com.au

In market

growing demand

Paddock to plate on show

This year's Sydney Royal Easter Show served up more than just fairy floss and dagwood dogs – showgoers had the chance to immerse themselves in Australia's world-leading red meat production systems when they visited the innovative and unique Australian Good Meat Paddock to Plate Experience.

MLA, through its Australian Good Meat brand, aims to meet the community's needs to know more about where their food comes from so they can feel good about eating a naturally nutritious product that is produced sustainably and with high standards of animal welfare.

The majority of Australian Good Meat's activity takes place through social media, so the Paddock to Plate Experience was an opportunity to connect with the community face-to-face. It was also a way for MLA's team and red meat producer ambassadors to have direct conversations to hear first-hand

what people want to know more about.

This year's Paddock to Plate Experience took visitors on an immersive 360-degree video supply chain journey into beef and lamb production. It was supported by a series of animations, so viewers could learn more about how Australia's nutritious, home-grown red meat is ethically and sustainably produced.

After participating in the experience, visitors were asked to complete a survey to assess their level of industry knowledge and red meat industry sentiment. ■

Here are some of the results from the 1,447 surveys collected during this year's Australian Good Meat Paddock to Plate Experience:

49%

rated their knowledge of the industry before the Paddock to Plate Experience videos and animations as 'good' or 'excellent', this increased to 87% after viewing the videos/animations

72%

believe Australia cattle and sheep producers act responsibly in how they care for the environment, with an additional 22% stating that they 'mostly' do (for a combined result of 94% positive). Only 2% believe Australia cattle and sheep producers do not act responsibly in how they care for the environment (4% were not sure)

81%

believe Australia cattle and sheep producers act responsibly in how they care for their animals, with an additional 15% stating that they 'mostly' do (combined result of 96% positive). Only 2% believe Australia cattle and sheep producers do not act responsibly in how they care for their animals (2% were not sure)

71%

believe Australia cattle and sheep farmers are working towards net carbon zero red meat industry (CN30), with an additional 18% stating that they 'mostly' do (for a combined result of 89% positive). Only 4% believe Australia cattle and sheep farmers are not working towards a net carbon zero red meat industry (8% were not sure)



» The Australian Good Meat Paddock to Plate Experience at the Sydney Royal Easter Show.



Learn more about Australian Good Meat at goodmeat.com.au

Find out the facts about Australian red meat at redmeatgreenfacts.com.au

✓ The recent Gulfood event brought red meat exporters and their customers together on the world stage.

Return of face-to-face trade opens new opportunities

With the gradual reopening of international borders, MLA has been able to activate parts of our international marketing program that have been mostly dormant for a couple of years.

The past few months have seen the return of face-to-face customer events and seminars, restaurant and retail promotions, and even trade events involving international travel.

Gulfood 2022

Gulfood 2022 was MLA's first physical event that included Australian exporters since Gulfood 2020.

Over the five-day event, 15 Australian red meat exporters joined more than 3,000 companies, 100 award-winning chefs and 150 speakers at the Dubai World Trade Centre for Gulfood 2022, the world's largest annual food and beverage trade show.

For Sam Gill, MLA's Regional Manager MENA, the timing was exactly right.

"Gulfood was the first physical trade show since 2020 that Australian exporters have been able to travel overseas and attend," he said.

"We're a country where 70% of our lamb and beef is exported, so having those face-to-face meetings is so critical."

For Australian exporters, Gulfood provided the chance to meet with existing customers and clients in one space over a short period, as well as to meet with potential customers.

"In this environment, our suppliers can continue to build on their existing customer relationships. Australia has stood up well during the COVID-19 pandemic by continuing to supply quality product into our export markets, but relationships can only go so far online or via Zoom before you need to reconnect in person."

Importantly, Gulfood is one of the few times there are many Australian exporters in the one place at the one time.

"It gives potential customers the chance to see all suppliers at once, and it gives us a chance to show off the quality of our product," Sam said.

MLA facilitates this by bringing the focus onto Australian red meat in a highly fragmented and competitive market.

"The Middle East region is a large net importer of food, and they source the best products from the US, Europe, South America and so on," he said.

"To stand out, we're telling our provenance story, what our excellent producers do, how our systems provide peace of mind and why Australian beef and lamb performs so well."

Sam said Gulfood clearly demonstrated that trade circumstances are changing.

"There were more countries exhibiting this year. We noted a stronger European presence and Israel was also exhibiting for the first time in a Gulf country," he said.

"The market is maturing from a commodity-based market to a segment that is more high-end. Consumers are socially connected and more aspirational, with higher expectations. Australia is one of the largest suppliers of quality beef and lamb, with clean, safe and hygienic processing methods and an excellent shelf life. We must remain very clear on what our value to the market is."

New opportunities

One of the Australian exhibitors at Gulfood 2022 was Fletcher International Exports,



✓ Fletcher International Exports (inset) was one of the Australian red meat exhibitors at Gulfood 2022.

a vertically integrated processor and exporter of lamb and sheepmeat products.

Fletcher operates processing facilities in Dubbo, NSW, and Albany, WA, with a combined processing capacity of more than 90,000 sheep and lambs a week – or more than 4.5 million head a year.

Fletcher Sales and Marketing Executive Brett Stockings said their long-term involvement in Gulfood reflects the value of the event to the business.

"It's always been an important show for us – it attracts not just the customers in the Gulf, but European and Chinese customers as well.

"The show provides us with an important meeting spot to see our customers throughout the week and spend some time with them."

Brett said because of the time since the last event, it was more important than ever to see what was happening in the markets.

"It was more noticeable this year – because of the two-year break – how markets have changed," he said.

"There are more opportunities in the existing businesses we service, as well as new opportunities that have arisen. There was also a different focus for some of the items we offer; we noticed more higher-value niche opportunities out of Gulfood this year." ■



- ▶ Scan the QR code to learn more about MLA's international marketing activities or visit mla.com.au/international-markets
- ▶ Access the latest overseas market data and insights for red meat mla.com.au/overseas-markets
- ▶ Find out more about Gulfood at gulfood.com 📧 Andrew Cox acox@mla.com.au



Stir up winter dinner in under half an hour



Lemongrass and tamarind beef stir fry

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, cook in batches, stirring for 2–3 minutes until browned. Transfer to a clean plate.
2. Add the wombok, bok choy, tamarind, stock and sugar to the wok. Toss to combine, stir fry for 2–3 minutes. Return noodles and beef with any juices to wok. 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 fillet can also be used in this recipe.
- Swap palm sugar for brown sugar, and 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 lunches the next day.



New beef campaign launches

MLA's new Australian Beef campaign, You're Thinking Beef, launched in May. The campaign stamps beef's position as the unbeatable protein choice in a range of popular mid-week meals. Learn more about the campaign and find more beef recipes at:

- australianbeef.com.au
- [youtube.com/AustralianBeefTheGreatest](https://www.youtube.com/AustralianBeefTheGreatest)
- [facebook.com/australianbeef](https://www.facebook.com/australianbeef)
- [instagram.com/australianbeef](https://www.instagram.com/australianbeef)



Follow the industry's sustainability journey

The Australian red meat and livestock industry prides itself on being world leaders in sustainability of our environment, our livestock, our people and businesses and our climate.

Visit MLA's sustainability hub to see how Australian red meat producers and value chains are innovating, and applying tools and practice change to their businesses to improve their profitability and sustainability.

mla.com.au/sustainability-hub



Sustainability videos



Beef and sheep sustainability frameworks



Key sustainability investments



Share our sustainability story



Keep an eye out for our special edition of *Feedback* in your mailbox in July which **showcases the red meat industry's sustainability story** so far.