

# FEEDBACK

MLA – FOSTERING PROSPERITY

MARCH/APRIL 2021



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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 29): WA producers Phil Cleghorn and Erica Ayers. Erica has been part of the FMD Ready Project to develop biosecurity resources for producers. Image: Jarrod Lucas, ABC Goldfields

## Have your say!

We'd love to hear from you

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# A NOTE FROM THE MD..



## What I'm working on

You may have heard me talk about MLA's quest for 'fewer, bigger, bolder'. In practice this means MLA is focusing on a smaller number of larger projects that create impact for the industry to help achieve the industry's goal of doubling the value of Australian red meat sales by 2030. We are trying to take a less transactional and more strategic approach to the investments we make. Three of these strategic programs of work are outlined on pages 6–7 – Northern Breeding Business (NB2), BeefLinks and the Sheep Reproduction Strategic Partnership (SRSP):

- NB2 has set the ambitious target to deliver an estimated \$20 million/year in net benefits to 250 northern beef enterprises by 2027.
- The adoption of WA BeefLinks outcomes is estimated to yield more than \$72 million in net benefits to more than 750 producers by 2025.
- The SRSP sets out to profitably and sustainably lift weaning rates by increasing productivity and decreasing mortality.

These initiatives all address specific regional, seasonal and operational challenges for the red meat industry, shaped through producer involvement. It has been fantastic seeing these get underway.

I am currently working with the MLA leadership team on sharpening our focus further and highlighting what is going to be most impactful for us in the next six months.

Reviewing the results from the first half of the financial year allowed us to identify areas of success and challenges, ensuring we are focusing on the right things going forward.

## Looking forward to Beef Australia 2021

Beef Australia is the most significant beef event we have in the country in terms of our ability to engage with our cattle and beef stakeholders. Once again, MLA is a principal partner of this event. The MLA Board and I are looking forward to chatting directly to producers and stakeholders and, most importantly, getting feedback from levy payers (see page 5). ■

## Have a question for me?

**Jason Strong**

MLA Managing Director

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Welcome to the March/April edition of *Feedback* where we take a look at some of the cutting-edge ideas and innovations that have been adapted from other industries and applied to ours.

I am sure you will be surprised to learn in our feature on pages 32–41 that some of the sectors and technologies we are drawing from include:



human assisted reproductive technologies



human medical technologies



gaming technologies



the military



the aviation sector



telecommunications

At MLA we are not just learning from other industries, we are also learning from what we have done previously.

We are focusing on investing in areas that will be impactful – and in order for something to be impactful, it will normally require a significant step forward and building on what we have done before. We do not need to reinvent the wheel every time, we want to focus on improvements that provide the opportunity to create and capture more value for the red meat supply chain.

I hope you enjoy this feature we have put together for you.

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## Bushfire impact

Are you a producer affected by the 2019–20 bushfire season? Help researchers address the implications of bushfires on livestock wellbeing by taking an online survey. It's part of an MLA-funded project with the University of Melbourne, the University of Sydney and Ausvet Pty Ltd, to address the implications of bushfire on livestock wellbeing.

The survey, which is confidential, closes on 19 April. ■

Visit [mla.com.au/bushfire-livestock-wellbeing](http://mla.com.au/bushfire-livestock-wellbeing)



## Red meat awards

Red meat producers who are responding to consumer demand for high quality beef, sheepmeat or goatmeat produced in a sustainable and ethical way are set to be recognised with the launch of a new Australian food industry award.



Nominations are now open for the Eat Easy Best Red Meat Producer Award, sponsored by MLA's Australian Good Meat program.

This award will celebrate the outstanding achievements of those individuals, families and businesses that are making a significant contribution to the Australian red meat and livestock industry.

Nominations close on 30 April. ■

For more information and to apply visit [eateasyawards.com/awards](http://eateasyawards.com/awards)

Find out more about the Australian Good Meat program at [goodmeat.com.au](http://goodmeat.com.au)

## Give your business an edge

MLA's EDGENetwork workshops are kicking off, providing an opportunity to learn new skills to improve your livestock enterprise. ■

Find out more about the EDGE programs at [mla.com.au/edge](http://mla.com.au/edge) and visit MLA's events page, [mla.com.au/events](http://mla.com.au/events), to find a workshop near you.



## Livestock leaders

Livestock Leaders is a professional development workshop aimed at building the capacity of future leaders, influencers and advocates of the Australian red meat industry. ■

For more information on upcoming workshops, visit MLA's events page at [mla.com.au/events](http://mla.com.au/events) or [livestockleaders.com.au](http://livestockleaders.com.au)

## Industry projections



MLA has released its 2021 Sheep and Cattle Industry Projections. Key points from the projections include:

### Sheep:

- national flock forecast to increase 5% to 67.3 million head by June 2021
- lamb numbers to lift on the back of increased marking rates
- demand for Australian sheepmeat resilient despite COVID-19 related impacts.

### Cattle:

- national herd enters rebuilding phase and is expected to increase 2% to 25.2 million head in 2021
- slaughter numbers to fall as producers retain more cattle on the back of improved conditions in northern Australia
- exports to bounce back as global economies recover from COVID-19. ■

Read the full MLA 2021 Industry Projections at: [mla.com.au/industry-projections](http://mla.com.au/industry-projections)



## Taking stock of RD&A

MLA has released a new, easy-to-read summary of completed and in-progress research.

It's the latest in a series of new initiatives from MLA to improve the accessibility and transparency of research, development and adoption (RD&A) in response to stakeholder feedback.

MLA's *RD&A stocktake 2018–2020* summarises the MLA-funded projects across the Research, Development and Adoption, Integrity Systems Company, and International Marketing R&D portfolios, from June 2018 through to November 2020. ■

Read this comprehensive summary of what MLA is investing in and the value it offers to the industry at [mla.com.au/rdastocktake2020](http://mla.com.au/rdastocktake2020)

# Bring on Beef Australia

**T**he nation's premier beef exhibition, **Beef Australia 2021**, is on the horizon.

MLA is a principal partner of Beef Australia 2021 – to be held in Rockhampton from 2–8 May – and will have a prominent presence across the event, spearheaded by the MLA trade site.

The theme for the trade site is 'redefining resilience'.

**Why this theme?** Resilience is a quality associated with Australian red meat producers who, for generations, have overcome hardships such as drought, fire, flood and troughs in trade.

**What does it mean to red meat producers?** In 2021 and beyond, resilience must evolve to fit a new set of challenges.

Looking ahead, resilience will allow the red meat and livestock industry to be agile and ambitious, to see adversity as opportunity, and to be competitive on the global stage. It will allow the industry

to be innovative and lead the world in sustainability and delivering high-value, high quality products to customers, consumers and the community.

In line with this philosophy, MLA's trade site will showcase key MLA initiatives that are supporting a prosperous Australian beef industry as it redefines resilience. ■

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*Below: MLA will have a prominent presence at Beef Australia 2021 led by the MLA trade site, themed 'redefining resilience'.*

## Dig deeper into data-driven technologies

**Here, MLA's General Manager – Research, Development and Adoption, Michael Crowley, gives a taste of what producers can expect at MLA's display in the Ken Coombe Tech Yards at Beef Australia.**

"MLA will showcase investments from across the beef supply chain that focus on innovation and drive improved productivity to support the resilience of businesses into the future," Michael said.

**"Resilience in the future means sustainable production, it's a better connection with the customer and it's looking at how we tackle the big, complex issues for our industry.**

"Producers can learn how to use data such as eating quality, pasture management and genetic selection to connect the production system with the rest of the supply chain to improve efficiency and optimise production.

"When producers are making decisions, it's important to use multiple data points to help inform those decisions.

"Data allows more precision in extensive production systems and enables producers to identify where they can create value." ■

## Three items for your Beef Australia to-do list

**MLA will host several activities at Beef Australia 2021, all aimed to educate, celebrate and immerse attendees in the beef value chain.**

Here's how you can join the action:

- 1. Visit the MLA trade site** – Be immersed in a display of MLA initiatives that support the prosperity of the industry. Talk directly with the MLA team and learn more about the tools, services and programs available to you.
- 2. Visit the Ken Coombe Tech Yards** – MLA will showcase digital agriculture projects that focus on data-driven technologies. Look out for the autonomous vehicle, adapted from the military, that may help producers monitor fences and replace tasks such as feed delivery (see page 38).
- 3. Attend an MLA seminar** – Hear how MLA's research, producer programs and industry collaborations are supporting a resilient beef industry. Topics include pasture dieback, genetics and the Northern Breeding Business (NB2) program (see page 6). ■



# Bold new world of research

**It's been more than a year since MLA Managing Director Jason Strong announced a new 'fewer, bigger, bolder' approach for MLA's investment in research, which will achieve industry's goal of doubling the value of Australian red meat sales by 2030.**

Here's an update on three collaborative initiatives that align with this approach to create unprecedented transformational change and build a sustainable, more profitable and resilient red meat industry.

These initiatives all address specific regional, seasonal and operational challenges for the red meat industry, shaped through producer involvement.

## Northern Breeding Business (NB2)

**What it's about:** Empowering producers to improve the performance of their breeding herd.

**Why it matters:** NB2 aims to address calf loss and reproductive performance in northern breeding herds, low profitability of many northern beef enterprises and low adoption of proven management practices and technologies.

Producers are at the heart of this initiative. They initiated it through regional consultation (see pages 8–9), and they're involved in implementing it.

**NB2 seeks to empower northern producers to make better, more informed business decisions that will make a difference on-farm.**

There's a need to improve how proven research and development (R&D) is translated to on-farm practice for the majority of northern Australia – and this initiative will keep on-farm practice change simple.

NB2 will help producers determine their level of breeder performance and what practices they need to put in place for their business to manage calf survival from conception through to weaning.

This project is bold. It covers a large area – Queensland, NT, Pilbara and the Kimberley – and targets 250 beef businesses over seven years.

The targeted changes may seem incremental, but if all properties across northern Australia improve saleable live weight by 10kg/head, weaning rate by 5%, and decrease mortality by 1% – then the impact will be significant.

**Where it's up to:** A two-year pilot program will launch this year. The initial four producer pilot groups have been increased to six in response to demand from producers. Four R&D projects have been approved through MLA's 2020 investment cycle (specifically with an NB2 focus) and are currently going through contracting for commencement this year.

**Want to be involved?** For information about how to get involved, as well as other frequently asked questions, and a comprehensive list of related articles and resources, go to [mla.com.au/nb2](http://mla.com.au/nb2)

## BeefLinks

**What it's about:** Providing diversified, higher-value markets for northern producers.

**Why it matters:** The five-year BeefLinks partnership is led by MLA and the University of Western Australia. It seeks to support integrated high-value supply chains to access a consistent supply of cattle from northern systems across WA,

to achieve profitable and sustainable beef yields matched to consumer expectations and market demands.

The first of its kind, this partnership builds a strategy to allow other research partners to co-invest and collaborate.

The partnership focuses on whole-of-value chain activities, providing on-farm management options that prepare northern animals for productivity gains, transitioning and integration into high-value processing/export markets and southern domestic markets.

**Where it's up to:** The partnership has formed a steering committee to influence the strategic direction. Three projects have been contracted:

- **Growing WA backgrounding through adoption:** Identifying and measuring best practice management for transitioning cattle from the northern WA rangelands to backgrounding properties to create alternative market opportunities for northern WA producers.
- **DietID feedbase mapping to raise productivity of cattle:** Delivering a comprehensive assessment of the nutritional value and bioactive properties of commercially available and naturally occurring plant species that make up WA rangelands and key backgrounding areas for the WA supply chain.



NB2 addresses the 'black hole' around calf survival to translate proven R&D into on-farm adoption.

# for producers



The Sheep Reproduction Strategic Partnership will help producers increase lamb production.

- **Defining the potential application of native Australian plants for a carbon neutral northern beef value chain in WA:** Providing producers with feedbase options that support methane mitigation practices throughout the WA supply chain and support a carbon neutral beef industry.

This year, ongoing collaboration with industry aims to attract funding partners to expand the number of projects across the value chain.

## Sheep Reproduction Strategic Partnership (SRSP)

**What it's about:** Providing a holistic industry approach to R&D, increasing impact and scale.

**Why it matters:** The SRSP will help producers profitably and sustainably increase lamb production through increasing weaning rates and lamb survival.

The SRSP involves industry organisations working collaboratively to develop larger, long-term programs of research, development and adoption work that focus on a single priority and address a common goal, delivering greater benefits and impacts for the industry.

Moving away from stand-alone, ad hoc projects, the SRSP will work towards an agreed vision, ensuring producers can successfully implement practical R&D solutions for their farm businesses to improve reproductive performance and weaning rates.

This will not only increase productivity but also improve animal health and welfare outcomes.

**Where it's up to:** The SRSP published an impact assessment in August 2020 and has established a management committee and recruited an independent Program Coordinator, Dr Sue Hatcher, from Makin Outcomes. A call for foundational projects was launched last year.

The focus for 2021 will be to implement projects submitted to the 2020 call, develop a communications and engagement strategy, and evaluate strategies to help producers rebuild their flock.

**Want to be involved?** To find out more information about the SRSP, contact MLA's Project Manager – Sheep and Goat Productivity, Emily Litzow at [elitzow@mla.com.au](mailto:elitzow@mla.com.au) ■

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📺 For more information about NB2 visit [mla.com.au/nb2](http://mla.com.au/nb2)

📖 In this edition of *Feedback*:  
Page 14–15: Managing challenges in northern grazing systems  
Page 20: How an innovative WA cattle business is creating high-value markets

## Three bigger, bolder projects

The **NB2** project has set the ambitious target to deliver an estimated \$20 million/year in net benefits by 2027 to 250 northern beef enterprises through:



**5% higher**  
weaning rate



**1% lower**  
herd mortality rate



**10kg higher**  
sale weight of cattle at the same age

By 2025, the adoption of **WA BeefLinks** outcomes is estimated to yield more than \$72 million in net benefits to more than 750 producers through:



**\$18.6 million kg**  
more saleable meat produced



**7% higher**  
weaning rate



**7% fewer**  
cattle that don't meet specifications



**10% smaller**  
environmental footprint for the entire value chain

The **SRSP** sets out to profitably and sustainably lift weaning rates by increasing productivity and decreasing mortality through:



on-farm best practice management



human social factors: adoptability



enabling technologies



basic R&D

# Delivering research with

**H**ave you ever wondered how MLA targets investment into research which will have a real impact to Australia's red meat and livestock industry?



General Manager – Research, Development and Adoption, Michael Crowley

General Manager – Research, Development and Adoption (RD&A), Michael Crowley, looks at how MLA's RD&A program areas, particularly the Investment Call, are evolving to align with MLA's guiding principles to direct resources into fewer, higher-impact programs of work that will deliver the best outcomes for industry.

## What is the Investment Call and how does it fit within MLA's Regional Consultation model for RD&A investment?

MLA's Investment Call is one part of our broader Regional Consultation model, established in 2015 to better assist in directing RD&A investment for grassfed cattle and sheepmeat levies to address producer priorities.

**The Regional Consultation process aims to ensure national and regionally relevant RD&A priorities are identified to deliver optimum value back to grassfed beef and sheepmeat businesses and the red meat industry.**

Key to this consultation framework are the three regional Research Councils:

- North Australia Beef Research Council (NABRC)

- Southern Australia Livestock Research Council (SALRC)
- Western Australian Livestock Research Council (WALRC).

Each of the councils have a substructure of regional committees ensuring broad representation of the interests of northern, southern and western grassfed cattle, sheep and lamb levy payers.

This process specifically empowers grassfed beef and sheepmeat producers to directly influence the on-farm RD&A activities their levies are invested in.

The Investment Call forms the most visible part of this – where priorities identified by producers through the regional committees and industry forums are consolidated by NABRC, SALRC and WALRC, then developed into Terms of Reference, and finally submissions are sought for projects that align to the priorities through a public call.

The Red Meat Panel provides strategic oversight of the process, and includes representatives from each of the research councils, as well as the peak industry councils – Cattle Council of Australia and Sheep Producers Australia.

## How is the Investment Call process changing?

Under our strategic plan, one of MLA's guiding principles is to direct resources into fewer, high-impact programs of work that will deliver the best outcomes for industry.

Based on this 'fewer, bigger, bolder' principle, longer-term, collaborative, multi-disciplinary programs have recently been developed to tackle some of industry's key priorities such as lamb survival, calf survival and associated reproductive performance (as identified through regional consultation) through the formation of strategic partnerships (see pages 6–7).

These partnerships will develop longer term programs of work that directly align to producer priorities and aim to attract new sources of project investment through the MLA Donor Company, in addition to the proportional allocation of producer levies.

As we deliver on the *Strategic Plan 2025*, all parts of MLA are continuing to change the way we plan and deliver our work, with a goal of achieving the greatest impact for levy payers.

Importantly, MLA's Investment Call will also reflect this new strategic direction.

Practically, this means a shift away from the traditional annual funding call – and a shift to funding longer-term projects that operate over multiple years with collaborative partners and multiple funding sources.

Last year's Investment Call process was reflective of this shift in strategic approach – with a focus on longer-term (3–5 year), collaborative and multi-disciplinary programs of work.

These larger-scale, longer-term projects are now underway and utilise a significant portion of the research funding for 2022–23, so there will not be a call for new RD&A projects this year.

## What does this mean for ongoing RD&A?

MLA will continue to work with the Red Meat Panel to ensure current partnerships are progressed and funded appropriately.

Some examples of ongoing projects which have been informed through Regional Consultation and the Investment Call include:

- Northern Breeding Business (NB2) to improve northern reproductive performance and calf survival (see page 6)
- investments into improving lamb survival through the Sheep Reproduction Strategic Partnership (SRSP) (see page 7)
- implementing plans to address the spread of pasture dieback (see page 13)
- producing new tools such as the Pasture Trial Network to compare the performance of pasture varieties.

More broadly, MLA's Regional Consultation model and Investment Call have been extremely successful in identifying and prioritising producer RD&A priorities. There are currently 52 active projects valued at approximately \$48 million from MLA's Investment Call process which will continue to be delivered.



# impact

## What will be the role of the Red Meat Panel and Regional Consultation?

The Regional Consultation model remains a critical component of RD&A activities at MLA, given it provides an essential link between producer needs and the direction of MLA funding.

MLA project calls that align to the Red Meat Panel's priorities will continue. However, this will be done in a more targeted, strategic and collaborative way to deliver greater impact from the investment.

The producer consultation framework and Red Meat Panel will continue to have input and oversight into the longer-term, multi-disciplinary RD&A projects underway – many of which are structured to be able to respond, change and adapt within the life of the projects.

The Red Meat Panel supports this new approach and is focused on ensuring producers are continually consulted to ensure RD&A priorities are being addressed and outcomes remain relevant and impactful for industry.

This year, the regional research councils will still be asked to submit regional priorities and provide input on how MLA programs can meet industry targets outlined in *Red Meat 2030* and MLA's *Strategic Plan 2025*.

This information will also be used to help MLA provide targeted information to regions. The focus will be on engagement and feeding information back, helping producers understand what tools and research outcomes are available already and also what is relevant to them that may be in the pipeline. ■

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🖥 For more information on MLA's Investment Call, visit [mla.com.au/investmentcall](https://mla.com.au/investmentcall)

Find out how the Investment Call fits into MLA's Regional Consultation process at [mla.com.au/consultation](https://mla.com.au/consultation)

Read MLA's *Strategic Plan 2025* at [mla.com.au/strategicplan](https://mla.com.au/strategicplan)

📖 Find out more about NB2 on page 6, the SRSP on page 7, and pasture dieback research on page 13.

# Is your soil match-fit?

**Just as a winning footy season starts with a successful pre-season, a high-yielding, high-quality feedbase starts with paddock preparation.**

MLA has launched a new online soils hub, so producers can get their soil into shape before the start of the season to optimise pasture and crop production.

The hub equips producers with practical resources for soil testing and soil management ahead of autumn sowing of pastures and dual-purpose crops.

MLA Group Manager – Adoption and Commercialisation, Sarah Strachan, said soil testing is an important step in identifying and addressing deficiencies ahead of sowing, to ultimately optimise feedbase production.

“Independent research commissioned by MLA has found potential for a five-fold increase in above-ground dry matter production by addressing feedbase underperformance issues.

“Soil testing is a relatively straight-forward and low-cost process that producers and advisors are using to identify opportunities to improve soil health and develop custom fertiliser and management strategies,” Sarah said.

“Soil testing provides an understanding of what course of action is necessary to drive an increase in desirable species, potentially higher stocking rates, improved soil carbon for better rainfall infiltration and reduce limitations to farm productivity.”

The soils hub includes new tips and tools on soil testing and management, practical ‘how to’ guides and videos, and case studies demonstrating the different benefits that soil testing has delivered to red meat enterprises.

MLA has also launched new eLearning platform featuring soil testing and assessment modules. ■

✉ Sarah Strachan  
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🖥 Visit the new soils hub here: [mla.com.au/healthy-soils](https://mla.com.au/healthy-soils)

Check out the other hubs on MLA's website, which provide a ‘one-stop shop’ of best practice advice, tools and information on topics such as livestock, feedbase, climate and sustainability: [mla.com.au/hubs](https://mla.com.au/hubs)

📖 Turn to page 22 to read how Victorian sheep producers, the Gabb family, gear up their feedbase for autumn.



# Unity has never tasted so good

**A**ustralian Lamb's annual summer campaign showed the country uniting over lamb – and laughs – after a year that saw Aussies more divided than ever.

Building on the 'Share the Lamb' brand platform, the campaign reflected upon 2020 as a pivotal time in history, when Australians were physically distanced due to the pandemic.

MLA Domestic Market Manager, Graeme Yardy, said the campaign showcased Aussie lamb in a topical yet light-hearted way, reflecting on what was an unprecedented and extremely challenging year for all Australians.

"The Australian spirit was really tested in 2020. For the first time in our history, hard borders between states challenged how we stay connected as individuals and as a country," he said.

"As a brand that celebrates unity, in this year's campaign we wanted to reinforce that as a nation we are always stronger together.

"Our hope for 2021 will be that the virtual get-togethers of the past 12 months will be replaced with family and friends enjoying each other's company and sharing an Aussie lamb barbie, the most delicious meal of all.

"As ever, the campaign positions lamb as the meat of choice to unite us, instilling a sense of Aussie pride while tapping into cultural themes and topical issues in a humorous and tongue-in-cheek way." ■

✉ Graeme Yardy  
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📖 Tastebuds watering? Turn to page 47 for a delicious lamb recipe to try at home.

## Campaign insights

**The campaign launched in January, which is a crucial time in MLA's annual marketing calendar, designed to support continued strong domestic sales for lamb over the summer months and ultimately provide strong returns for Australian lamb producers.**

The ad appeared on TV, online video platforms and across social media. The TV campaign was extended with billboards featuring state premiers uniting over lamb at borders over the Australia Day long weekend, supported by a radio partnership with Fitzy and Wippa on NOVA. To keep lamb top of mind and drive sales, meal inspiration was delivered across social media and on digital screens in retail outlets.

Here are some campaign highlights:

- the ad was viewed more than 6 million times on MLA's and other media's social media platforms
- it sparked 163 media stories including in *The Australian* and *The New York Times*.



A scene from the latest Australian Lamb ad, where a lamb cutlet brings the community together.

## Lamb takes to the screen

**The new Australian Lamb TV ad takes viewers to the year 2031 – division between states has escalated and a once-united nation is separated by a great wall, towering over every state border, offering a tongue-in-cheek look at what could be if state borders are shut for good.**

However, this un-Australian division can't last forever as the great unification of Australia is sparked by an irresistible scent coming through a crack in the wall.

As the hero is overwhelmed by the aroma and begins smashing at the wall that separates himself from Queensland, a hand appears through the crack holding out a beacon of hope – a perfectly cooked lamb cutlet!

This act of unity triggers Aussies around the country to tear down the wall, overcome their fears and together share a delicious lamb BBQ. ■

📺 Watch the ad on the Australian Lamb Facebook ([facebook.com/australianlamb](https://facebook.com/australianlamb)) or YouTube ([youtube.com/AustralianLamb](https://youtube.com/AustralianLamb)) channel or at [australianlamb.com.au/unitedwelamb](https://australianlamb.com.au/unitedwelamb)

# ON FARM

RESEARCH IN ACTION



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FINISH WITH FORAGE  
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AUTUMN GRAZING TIPS  
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# Five eTools to inform better on-farm decisions

**F**ine-tune your business by tapping into MLA's updated online tools, which have improved accessibility and usability to help producers run productive and profitable businesses.

Here are five ways to access information to support on-farm decision making, learn new skills and access MLA's research and development (R&D).



## 1. On-farm tools and calculators

Five of MLA's most popular feedbase tools and calculators have been given a face lift to be more user-friendly and accessible, even with connectivity challenges.

These include:

- stocking rate calculator
- soil phosphorus tool
- pasture improvement calculator
- feedbase planning and budgeting tool
- feed demand calculator.

The tools and calculators can now be used without an internet connection, and are mobile and tablet friendly. This means producers can use the tools and calculators out in the paddock.

Producers and industry advisors can access these tools through the MLA website or download the new MLA eTools app for Apple or Android.

Note, the website version of the tools and calculators can be used without internet, however the MLA eTools app needs an internet connection.



## 2. New eLearning platform

Producers and advisors can develop new skills anytime, anywhere with MLA's new free eLearning platform. It's easy to access and offers a flexible way to expand your skills in your own time. It's also a great resource for staff training.

The eLearning platform includes a range of modules covering:

- animal health and welfare for pain relief
- sheep genetics
- beef production and productivity
- healthy soils and pastures.

The modules, which include slideshows, quizzes, images and videos, suit a range of learning styles and take between 5–20 minutes to complete.



## 3. Easy access research reports

The R&D section of [mla.com.au](http://mla.com.au) has been overhauled for consistency and usability.

More than 275 of MLA's recently completed R&D projects and the 38 most searched R&D themes have

easy-to-read summaries. They include an overview of MLA's investment in each area, relevant resources and reports.

To make it even easier to find a particular research report, the searchability of 8,500 R&D projects has been improved.



## 4. Practical resources by topic

MLA has developed resource hubs on [mla.com.au](http://mla.com.au) to provide a 'one-stop shop' of best practice advice, tools and information on popular topics such as leucaena, phosphorous, dung beetles, seasonal variability, Carbon Neutral 2030 (CN30), mental health and pasture dieback.



## 5. Education resources at your fingertips

MLA, along with funding partners, develops education and extension resources for producers, such as manuals, tools and calculators.

Many are covered by the Creative Commons licensing system, which provides globally recognised licences allowing users to print, use, share and build upon copyrighted material such as manuals, factsheets, online tools and videos – free of charge.

MLA's Creative Commons webpage includes resources such as:

- More Beef from Pastures manuals and videos
- Give Goats a Go manuals and videos
- feed demand calculator
- food safety manuals.

You can use these materials for free, for example to:

- embed tools and calculators on websites
- create workshop materials for advisors and producers
- develop articles to publish in newsletters and on websites
- create course content for students. ■



MLA is looking to create more online training packages so if there's a topic you'd like to know more about please contact:

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Access the new-look tools and calculators at [etools.mla.com.au/hub](http://etools.mla.com.au/hub)

Access the eLearning platform at [elearning.mla.com.au](http://elearning.mla.com.au)

Search MLA's R&D reports at [mla.com.au/search-RD](http://mla.com.au/search-RD)

Visit MLA's resource hubs at [mla.com.au/hubs](http://mla.com.au/hubs)

Access the Creative Commons resources at [mla.com.au/CC](http://mla.com.au/CC)

# How susceptible are your pastures to dieback?

**P**asture dieback is a condition affecting the higher productivity grazing districts in eastern Queensland and north-eastern NSW.

Tropical sown grass species are the main ones affected and through reduced pasture yield the productivity of affected properties can be severely impacted.

It's different to other conditions which can reduce the productivity of pastures, such as pasture decline or 'rundown', overgrazing, poor soil fertility, compaction, variable rainfall and temperature dynamics or a combination of these factors.

MLA is working with research and government partners to better understand the causes and management options to address the issue, and researchers are studying numerous subtropical and tropical pasture grasses.

## What pasture species are most susceptible?

All commonly sown tropical and subtropical improved pastures are reported to be affected by pasture dieback.

The main species affected include buffel grasses (cultivars Gayndah and American), creeping bluegrass (cultivar Bisset), Rhodes grasses, pangola, *paspalum* and *setaria*.

A very limited number of native pasture species are also reported to be affected. These include Forest bluegrass (*Bothriochloa bladhii*), Golden beard

grass (*Chrysopogon fallax*) and Black speargrass (*Heteropogon contortus*).

## What pasture species aren't as susceptible?

Some grasses appear to be more tolerant (take longer to be affected) than others, however eventually these can still die.

Some specific grass varieties of affected species, such as Biloela buffel, have been reported to be more tolerant in locations where Gayndah and American buffel have been completely decimated.

Legumes – including annuals such as lablab and perennial species such as desmanthus, butterfly pea and stylos – are all reported and tested to be highly tolerant or resistant to pasture dieback. There are reports of patches of leucaena dying out, but the cause has not been identified.

Annual forages such as forage sorghum and oats appear to grow satisfactorily in affected areas but further testing is needed to develop knowledge of other forages.

## What about mixed pastures?

Mixed pastures seem to be more resilient.

It's common to find pasture dieback in buffel grass monoculture pastures especially where the pasture yield is moderate to high. However, not all monoculture buffel pastures have dieback. The impact of dieback in monoculture pastures is more obvious due to the lack of other species present. Pasture dieback is



An example of pasture dieback.

also common in non-grazed situations, such as roadsides, where there is a diversity of species.

Pastures may recover completely without intervention, but research and field surveys show that pastures made up of grass and legume mixtures tend to recover better – the higher the proportion of legumes in the mix, the more resilient the pasture.

## Will any plants survive in a paddock of dieback?

Yes, in some locations pastures have recovered without any intervention. However, recovery can take years, problematic weeds can proliferate in the meantime, and the recovering pasture species might not be the most productive depending on what the seedbank in the soil contains.

## What research is underway?

MLA is supporting research to identify pasture species that can restore

beef productivity in dieback-affected paddocks.

This includes trials in a range of areas to investigate the tolerance and performance of many grass species, forages and legumes.

Another emerging area of research is investigating endophytes in tropical and subtropical grasses. Endophytes are organisms that live either in-between plant cells or on and around the plant.

Knowledge of endophytes in tropical grasses is limited, but endophytes can generally strengthen plant defences and so increase the tolerance of plants to attack from a range of diseases and insect pests. ■

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🖥️ For more information and resources to identify and manage pasture dieback, visit [mla.com.au/pasturedieback](http://mla.com.au/pasturedieback)

# Tips to target better beef reproduction

**R**eproductive loss has a large impact on the performance of northern beef herds, so MLA has developed a toolbox of information to provide practical steps to get more calves on the ground.

There are many reasons for calf loss (*in utero* or post-calving) but unless calves are examined soon after abortion or death, it can be difficult to determine the cause.

Understanding the causes of reproductive loss is important to find a solution, to lift whole-herd productivity as well as increase profitability, as every breeder that fails to produce a weaner can reduce business income by approximately \$400/head.

MLA's suite of *Reproductive Performance Tips & Tools* helps producers improve the reproductive performance of their herd.

The first step is to determine when losses are occurring to work out if the problem is failure to conceive, abortion or losses at or after calving.

Here are four tips to diagnose reproductive loss on-farm this autumn:

**Check cow body condition:** If pregnant cows are in body condition score less than 2.5, nutrition could be an issue – check their pastures and supplementation program.

**Review pregnancy status of different age groups:** Lower pregnancy rates in first-calf cows than mature cows can indicate nutritional issues.

**Benchmark maiden heifer performance:** Low pregnancy rates in maiden heifers may mean they were below critical mating weight at joining. If they are above critical mating weight, low pregnancy rates may indicate an underlying disease exists.

**Assess fat breeder cows:** Most cows should be pregnant to achieve the goal of one well-grown weaner per breeder, per year. A non-lactating



Understanding the causes of reproductive loss can help lift whole-herd productivity.

cow at pregnancy diagnosis suggests abortion or calf loss. Fat, non-lactating and non-pregnant cows suggest a permanent infertility problem.

## Dig deeper with data

Another way to determine what's causing reproductive loss is to submit samples for analysis from non-pregnant breeders or deceased calves.

Sampling and recording data can help identify reproductive diseases. Consult your veterinarian on how to collect and store samples for pathological diagnosis.

When collecting samples, focus on:

**Cow history:** Accurately record identity, the property identification code (PIC), age, pregnancy status, lactation status and body condition score for animals sampled.

**Calf/foetal/placenta specimens:** Collect a fresh foetus, deceased calf or placenta (if available). If a veterinarian is unavailable to collect, keep fresh specimens chilled until one can be contacted.

**Cow samples:** Collect 15–30 blood samples and vaginal swabs from identified mobs of non-pregnant and pregnant cows. Keep records for each cow sampled.

**Bull samples:** Collect swabs from the prepuce of bulls where the pregnancy rate is low or a venereal disease is suspected in the breeder herd. ■

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📄 MLA has Tips & Tools for northern cattle producers looking at these topics:

- *How do I manage heifers pre-joining to improve reproductive performance?*
- *What's causing reproductive loss?*
- *What females should I sell?*
- *What joining system should I use?*

Download the full suite of Tips & Tools at [mla.com.au/reproperformance](http://mla.com.au/reproperformance)  
Visit [mla.com.au/seasonal-hubs](http://mla.com.au/seasonal-hubs) for resources to support your on-farm decision making this autumn.

📖 Turn to page 6 in this edition or visit [mla.com.au/nb2](http://mla.com.au/nb2) to learn more about Northern Breeding Business (NB2), an MLA initiative to address calf loss in northern breeding herds.

# Fertility is proof in the P pudding

**N**orth Queensland beef producers Peter and Anne Finlay know that to get the most out of their land they can't ignore the importance of phosphorous (P) supplementation, so they take a year-round approach to providing this important nutrient for their cattle.

It's been their focus for the past 25 years as they knew their soil was P deficient when they purchased 'Julia Park' at Torrens Creek.

Deficient soils in many northern production systems can lead to insufficient P in the pasture to meet animals' requirements for vital functions such as building bones and teeth, and producing milk.

The Finlays feed cattle P year-round, adjusting the level of supplementation to suit the season and breeding requirements.

During the wet season, while there is green feed, cattle have access to a 50/50 mix of Kynofos™ – which is 21% P – and salt lick, fed in tyre troughs.

"Breeder intakes during this time are around 46g/head a day, equating to about 10g of P/head a day to match breeder requirements," Peter said.

"This costs us roughly 30¢/head a week.

"As it starts to dry off I put out a 27% urea loose lick mix that also contains 12.5% Kynofos™, even before it's needed, to make sure the cattle have it in their system.

"Cattle intakes of the dry season lick increase to around 200g/head a day, which costs us around \$1.12/head a week."

The Finlays leave the mixture of P and salt out during the dry so cattle can self-regulate intake of either lick as required.

"As we control mate, we have very few wet cows during the dry spring period, so I've always felt that the 12.5% Kynofos™ they are getting with the urea lick is adequate," he said.

## Fertility and weight

Peter credits this P program with helping to provide strong calving and weaning weights, with a five-year

average of 72% branding and 69% weaning rates.

"Considering four of the past five years have been very poor seasons with reduced feed quality, I'm quite happy with those rates," he said.

"On this country, if you aren't feeding P, weaning rates could be as low as 50%, you'll struggle to produce enough heifers as replacements and growth rates will be back to blazes, so it's crucial to keep it up."

On top of strong fertility, Peter said P also helps with weight gain, allowing them to turn-off their steers at 26–28 months at between 380–400kg, even in lighter seasons.

## Part of the puzzle

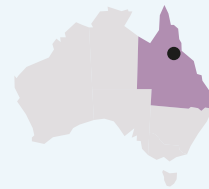
Peter has used programs such as MLA's NutritionEDGE to guide herd nutrition strategies.

He said P is just one part of their total management approach.

"We're constantly looking at tweaks we can make, such as cross-breeding for better fertility and weight gain, rotational grazing strategies and pasture improvement." ■

## SNAPSHOT:

**Peter and Anne Finlay,** 'Julia Park', Torrens Creek, Queensland



**Area:** 25,500ha

**Enterprise:** Beef cattle

**Livestock:** 1,800–2,000 red Brahman cattle (800 breeders)

**Pasture:** Soft spinifex, wire grass, black speargrass, Forest Mitchell, buffel grass, edible bushes

**Soil:** Upper desert uplands

**Rainfall:** 425mm

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🖥️ Check out MLA's phosphorus hub:  
[mqa.com.au/phosphorus](http://mqa.com.au/phosphorus)  
MLA NutritionEDGE program:  
[mqa.com.au/EDGE](http://mqa.com.au/EDGE)

*Below: Peter and Anne Finlay know that to get the most out of their red Brahman, P is essential.*

## LESSONS LEARNED

- P supplementation is essential for livestock to perform on P-deficient country.
- P supplementation can improve weaning and branding rates and weight gains.
- Year-round supplementation allows cattle to self-regulate intake.



# Data-backed decisions pave way for change

**C**hanging an enterprise is a big decision to make, but NSW beef producer Michael Shannon has taken on new challenges, backed by advice and research.

The Shannons' property at Cathcart in the Monaro region has evolved over time. In the past, major changes included replacing the stud Hereford herd with Angus and Hicks Australian Beef Composite/Angus cattle, chosen for their better returns and hybrid vigour, and introducing sheep to the business.

However, in the past five years, Michael has made some major management decisions with the support of consultants and modelling systems to put his business on a more productive, profitable and sustainable path.

## Enterprise change

In 2016, Michael made the decision to sell off the flock, to streamline management.

The region's high rainfall and mild summers contributed to a significant burden of Barber's pole worm in the flock, with some lambs receiving up to nine drenches before they were sold.

"When you factor in the labour and costs involved in keeping up with animal health requirements like these, and the difficulties in meeting market specifications, it meant we weren't getting anything else done," Michael said.

He crunched the numbers and decided to move out

of sheep – which the family had produced for 30 years – while the market was strong.

It proved to be the right decision for their business and has removed a lot of stress.

Despite setbacks from recent droughts and fires, Michael said the farm had benefited from the additional time they now had to work on the business, rather than in it. Streamlining their enterprise has also improved grazing management.

"We'll still run a few sheep again when there's an opportunity in the market, but for us, beef is the game now," Michael said.

## Market change

Michael's focus on production economics to improve the profitability of each animal and hectare has seen him move away from the region's traditional model of turning-off cattle as weaners.

He's participating in an MLA Producer Demonstration Site (PDS) which highlighted the profit potential of taking weaners through to yearlings (see story opposite).

"What we've found is that by taking an animal from the traditional weaner weight of around 200kg up to 350kg, we have far more opportunities beyond the farm gate and more bang for our buck," Michael said.

"If we can get through winter holding our weaners, we sustain higher DSE (dry sheep equivalent) per hectare and make better use of the spring flush."

He grazes weaners on fodder crops such as canola/wheat,



Monaro, NSW, beef producer Michael Shannon.

which are delivering 1–1.4kg/head/day weight gains compared to 0.4–0.6kg/head/day on pastures.

"We've now got the chance to watch the market and identify profitable times to make a play at selling heavier or lighter animals, rather than just selling off weaners like we used to," Michael said.

**"From the PDS, we've been able to identify what works and what doesn't with our fodder crops and our animal management."**

An important strategy has been weaning calves into containment, so winter fodder crops can reach a minimum of 3,500kg dry matter/ha.

"Depending on the season this may only be for a month, but in 2020 we fed them in containment for five months, to ensure we're extracting the most weight per mouthful of feed when they do go on the crops."

## Support

Michael said the tough management calls made in recent years to maximise production have been supported by agriculturalist and advisor Doug Alcock, who is also providing technical support to the PDS project.

"Doug came on board as an advisor when we were initially moving away from sheep, and has been with us since," Michael said.



## PDS pays off

**M**ichael Shannon (see story opposite) hosts one of the six sites in the 'Weaner to yearling production pays off' Producer Demonstration Site (PDS) project, supported by MLA and managed by Monaro Farming Systems.

Doug Alcock of Graz Prophet Consulting, who is overseeing the PDS, said the project assesses the profitability of finishing weaners on fodder crops to sell as yearlings, breaking the mould for traditional grazing systems for the region.

"In the Monaro, producers typically sell weaners to get stocking rates down for the long cold winters when pasture stops growing," Doug said.

"This trial is based on GrassGro™ modelling which showed that with a good pasture or crop base, you're better off retaining steers and selling as yearlings, even if you run less cows as a result."

Doug said that despite a horror year for drought and fire in 2020, which disrupted the trial significantly, initial results from the first year in 2019 were promising.

"For that first year we saw pretty consistently that the growth rates in cattle matched up with the estimates we had, which gave us confidence in the modelling," Doug said.

The 2019 results showed net profits ranging from \$160–\$550/ha of specialist pasture or crop, with all but one site exceeding their traditional profits from selling weaners directly onto the market at an average return of \$166/ha.

Data collection will continue this year. ■

### How to host a PDS

**MLA's Producer Demonstration Site (PDS) program aims to increase the rate of adoption of key management practices and technologies that improve business profitability, productivity and sustainability.**

Preliminary applications open on 1 April for producer-driven projects which align with regional and industry priorities.

Successful applicants can apply for up to \$25,000/year for levy and \$50,000/year for co-contributor funding for the duration of the project.

PDS submissions close on 12 May and should be sent to [pds@mla.com.au](mailto:pds@mla.com.au) ■

### LESSONS LEARNED

- > Retaining weaners to sell as yearlings can produce additional profit but this approach requires the right management.
- > Look for management strategies which can reduce the burden on your business.
- > Accept support where it's available to build confidence in your management decisions.

### SNAPSHOT:

**Michael Shannon,**  
'Lowanna Properties',  
Cathcart, NSW



**Area:**  
1,400ha

**Enterprise:**  
Cattle

**Livestock:**  
1,000 Angus and  
Hicks Australian Beef  
Composite breeders

**Pasture:**  
Soft-leaf fescue–clover  
mixes, fodder cropping

**Soil:**  
Sandy loam, heavy black,  
basalt and granite

**Rainfall:**  
800mm



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More information on how to get involved in MLA's PDS program is available at [mla.com.au/pds](http://mla.com.au/pds)

MLA's online tools, including a stocking rate calculator, are available at [mla.com.au/calculators](http://mla.com.au/calculators)

"He's been a big help with what we've done here the last few years, modelling our business using GrassGro™ to provide us with information we can cross-check with our own records to make the right calls on changing our enterprise.

"Out of this we've been able to identify important data like the best stocking rates for us, both in the finishing system and across the property, with a rough increase of 25% in our stocking capacity, joining times for the right calving period and when to wean.

"Although we haven't been able to completely proof the system due to drought and fires, we're confident we're on the best path through the strategic changes we've made." ■

# Elevate your flock with eID

**T**aking a livestock business to the next level requires good monitoring, good decision making and great implementation.

Electronic identification (eID) can be a powerful tool to make more informed flock management decisions at critical times throughout the year, such as pregnancy scanning and lamb marking.

MLA Donor Company (MDC) co-funded the Agriculture Victoria 'eID Enabled' project to investigate opportunities to incorporate eID on-farm and within the lamb supply chain.

"The more things you measure, the more you can perfect your management and the better your business will be," Agriculture Victoria technical specialist Kirstie Anderson said.

"Incorporating eID systems into your enterprise can help you achieve this outcome.

"eID enables you to record different aspects of performance across a range of time points. This data can then be collated and analysed, allowing you to make informed decisions.

"The value of implementing eID is higher the earlier you start recording information. Ideally you should apply the tags at lamb marking and start your data recording from that point."

Read the story opposite to find out how Victorian producers Edward and Charles Blackwell use eID at lamb marking to guide future flock management decisions. ■

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🖥️ MLA's seasonal hub has resources and information to make timely decisions in your business:  
[mla.com.au/seasonal-hubs](http://mla.com.au/seasonal-hubs)

For information on how to use eID during pregnancy scanning read:  
[mla.com.au/scanning-eid](http://mla.com.au/scanning-eid)

## Five benefits of using eID

The value eID can bring to individual sheep businesses varies, but broadly includes these five benefits:



### 1. Measure the response to management

eID makes it possible to make a change and measure the difference – such as matching condition score at joining to pregnancy scanning result.



### 2. Manage individuals while also managing the mob

Use eID to monitor individual animals while running them in large mobs. The technology allows mobs of sheep to be boxed together for periods of time before drafting them back into their relevant classes, reducing labour requirements and streamlining grazing efficiency while retaining the ability to monitor individual animals.



### 3. Increase labour flexibility

Reliably condition scoring individual animals requires training – if key staff members are busy or leave, it's not always possible to have a trained individual to complete these assessments. However, when eID equipment is set up, relatively untrained staff can collect weights – information which can be used to assess an animal's status.



### 4. Select animals to retain

Use eID to collect data on individual animals to aid decisions such as which sheep to retain in the flock based on their performance. To do this effectively the data collection process must start as early as possible, from lamb marking (see story opposite).



### 5. Enhance traceability

The ability to track animals as they move through the value chain is an important feature of eID, but it's not only useful for industry to prepare for biosecurity breaches. Consumers increasingly expect to be able to trace their food and fibre to its source and are willing to pay more for products they trust. ■

# Weighing

**E**fficiency is the name of the game for brothers Edward and Charles Blackwell, who run a sheep and cattle enterprise at Dunkeld in south-west Victoria.

With just the two of them responsible for day-to-day operations, they only adopt new practices that will either help them be more efficient or make better decisions.

They've applied this mentality to using electronic identification (eID) to help make better decisions, taking a cautious approach about the type of data they collect.

"I'm not going to collect data for the sake of collecting data," Edward said.

The Blackwells started using eID when classing heifers within their beef enterprise and have now extended the process to their sheep, when classing ewe hoggets. They also use eID to monitor the performance of different classes of sheep throughout the year.

The process begins early, at lamb marking, as their whole eID decision-making system revolves around getting tags in the lambs and recording key information.

The attention to detail at this point makes the whole system work and allows the Blackwells to get the most out of their time invested in eID use.

"At lamb marking we record whether they were born single or twin, whether from a maiden or older ewe, which sire team they were sired by and an average date of birth," Edward said.

Most of this information is achieved just by keeping a track of the tag sequence

# up eID delivers efficiency gains



Edward Blackwell uses eID and weighing technology to make informed decisions.

**SNAPSHOT:**  
Edward and Charles  
Blackwell and families,  
Dunkeld, Victoria



**Area:** 2,000ha

**Enterprise:**  
Breeding sheep and cattle

**Livestock:** 7,000 Merino ewes, 450 breeding cows

**Pasture:**  
Mix of phalaris and native grasses on heavy black soils and improved ryegrass, phalaris and clover on other areas

**Soil:** 20% heavy black soils, 80% clay over loam

**Rainfall:** 700mm



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Making More From Sheep program: [mfa.com.au/mmfs](http://mfa.com.au/mmfs)

## LESSONS LEARNED

- > Using eID hasn't saved us time but it's improved accuracy and efficiency of data collection.
- > Be strategic – don't collect data for the sake of collecting data.
- > Collecting data such as weights helps identify if you're on the right track.

that is used in each mob, then matching this up later on with the tag bucket file in the software they are using.

"I've got my head around the software and find it easy enough to use, so we just record the sex at lamb marking time and keep track of which tags go in which mob to gather the rest of the information we need," Edward said.

"We do a bit of trialling with different ram teams and have found the eID perfect for this."

The ewes that are mated to a particular ram team are all recorded so they can be drafted back into that mob for lambing. This way, all lambs born can be recorded against the sire team.

Later, during the classing process, the brothers pull up all the information available on each hogget on the screen – they know whether it's born a twin or single, the age of its dam and the sire group. They also have the animal's most recent weight and the average daily gain in front of them.

### Data-backed decisions

The Blackwells use eID to improve the accuracy of their decisions as well as to monitor and confirm that they're on the right track.

"It definitely doesn't make the job quicker but it does improve the accuracy," Edward said.

"I enjoy weighing sheep and seeing the weight gains because it helps confirm we are on the right track – and if we are not on the right track, then early intervention is certainly better than later."

While their system is functional, they haven't over-invested.

"It's not a whiz-bang set-up but it works," Edward said.

It takes around an hour to weigh 600 sheep through their system.

### What gets weighed:

The Blackwells' weighing strategy includes:

- **Young sheep:** Each animal is weighed around six times (timing depends on the season) in its first year, to make sure it's meeting its targets.

### Containment and feedlot:

During full containment feeding in summer, the Blackwells increase the frequency of weighing to identify any poor does and respond accordingly. The lambs being finished in the feedlot are regularly weighed to identify shy feeders.

- **Ewes:** The Blackwells record pregnancy status for each ewe as well as whether she raised a lamb by wet and drying at weaning. This information is combined with the ewe's previous results – if it's lost more than one lamb in three years it's culled. They also do some targeted weighing of adult ewes soon after the lambs are weaned, with two weigh-ins a fortnight apart to monitor their recovery. They used to do this by condition scoring but have found it's easier to get labour to push sheep through the weigh crate than to get labour with the skills to condition score accurately and consistently. ■

# Down the track

In this series, *Feedback* catches up with producers profiled in previous editions, to see how their business is evolving in response to new challenges and opportunities.



## Looking back

In its June/July 2018 edition, *Feedback* opened the gate to see how the Pardoo Beef Corporation, at 'Pardoo Station', WA, was partnering with MLA Donor Company (MDC) on a collaborative co-innovation program.

The three-year program explored the production and economic benefits of different pasture and breeder management systems and global market options to determine how to best utilise Pardoo's 15-gigalitre annual water allocation.

The project has presented its share of challenges – from sourcing skilled staff to capturing data in an extensive grazing enterprise – but the first generation of Wagyu bred on Pardoo Station have now reached dinner tables around the world.



## Looking ahead

**A high-value beef product might not be the first thing people connect to the vast, dry Pilbara of WA, but Singaporean businessman Bruce Cheung has tapped into the region's water resources as part of his vision to produce Wagyu for a global market.**

By developing water infrastructure to grow year-round feed and produce boxed beef, he created an alternative to the region's traditional model of turning cattle off native pastures for live export.

And so, Pardoo Beef Corporation (PBC) was born, targeting a higher-value market that demands quality and provenance.

The company purchased 'Pardoo Station' in 2015 with two existing centre pivots and soon added more as well as a Wagyu herd.

In 2016, PBC embarked on a three-year Collaborative Innovation Strategy program with MDC to glean knowledge about their innovative beef production model to share with the wider industry.

An early challenge was finding a scientist willing to live in the remote region. After a year's quest, MDC and PBC approached Kevin Bell, a former Professor of Animal Production Systems at Murdoch University, to work at Pardoo.

"It wasn't really what I planned to do at the age of 75, but it was too much of a challenge to let it go," Kevin said.

"My wife was a bit dismayed, but I've made it work. I spend one week in every two or three there collecting data, then come home to Broome and work with good connectivity and access to libraries."

He said the Pardoo project provided many insights for the wider beef industry.

**"It opens up one more market opportunity for the beef industry in this and similar environments.**

"No one thought you could put that sort of beef on a table coming out of those harsh conditions."

Here's some of the insights from PBC, as it evolves to meet the challenges presented in the Pilbara.

### Building a workforce

Pardoo's irrigation supports year-round grazing productivity, but this creates a challenge of attracting and retaining staff who are skilled at intensive grazing management in a northern tropical environment.

The high rate of pasture production through summer means human resource requirements to rotate

stock through paddocks are greatest at the time of year when, traditionally, staff requirements in northern Australia drop off because of seasonal conditions.

"We record growth rates at the extreme of 300kg/ha/day, so you have to manage the grazing extremely well," Kevin said.

MLA's Program Manager – Capability, Josh Whelan, said MLA was committed to addressing the skills base in grazing management.

"A key pillar of MLA's *Strategic Plan 2025* is transitioning to a culture that captures and shares data across every point in the supply chain – investing in people and systems to have the skills to drive decision making," he said.

"Building innovation capability in grazing management with Pardoo can help showcase to others how to approach solving one of industry's big, complex challenges."

## LESSONS LEARNED

- > Source a range of advice and look beyond the beef industry for ideas.
- > Don't rush change – understand the cost of production and required skill base first.
- > When managing tropical grass, profitability requires precise management.
- > Regularly record cattle weights to detect problems early.

### Data-driven decisions

The initial MDC project examined two essential requirements for the intensive Wagyu production system on irrigated tropical pastures – grazing management and cattle weight gains.

#### 1. Grazing management

The project assessed the rotational grazing system at Pardoo and found grazing intervals varied greatly and were influenced by pasture type, previous grazing history, temperature, fertiliser and water supply.

The project used two grazing management software programs, MaiaGrazing™ and AgriWebb™,

to record cattle movements over up to 80 paddocks. Both were found to have excellent functionality to record and manage stock movements and subsequent paddock performance.

The project also highlighted how collecting additional data, such as crop water use, supplementary feeding, genetics and feedlot and market performance, would be valuable for decision making.

This paved the way for a second three-year project – which began in 2020 – to get a clearer picture of PBC's cost of production through digital infrastructure and data management.

Although it varies with the age of cattle and time of year, the cost of production at Pardoo ranges from \$2.50–\$4.50/kg. PBC will draw on this second project to make operational adjustments to hit an optimal cost of production of \$2.50–\$3/kg.

#### 2. Weighing

Cost of production at Pardoo was calculated using weight gain and input costs.

Initially, the project team found that moving cattle to a number of robust, fixed, strategically located yard facilities with either permanent or mobile scales

was the most efficient way to frequently weigh cattle of variable mob sizes and types.

However, a downside of this approach was handling stock in extreme temperatures.

To overcome this, PBC have now installed walk-over weighing systems to generate automatic data.

### Development

PBC has plans to continue developing water infrastructure as well as build its herd of Wagyu cattle which are bred for the harsh Pilbara and Kimberley environments and selected for hardiness and reproductive and eating quality traits. ■



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Read the article on Pardoo Beef Corporation which appeared in the June/July 2018 edition of *Feedback*, pages 20–21: [mla.com.au/feedback](http://mla.com.au/feedback)

View the final report of the first MDC-funded project at [mla.com.au/pbc-report1](http://mla.com.au/pbc-report1)  
PBC's brands are part of MLA's CoMarketing Program: [comarketing.mla.com.au](http://comarketing.mla.com.au)

## SNAPSHOT:

**Pardoo Beef Corporation**, Pardoo Station, Port Hedland, WA



### Area:

200,000ha, Port Hedland; 430ha, Wundowie; 500ha, Perth Hills

### Enterprise:

Purebred Wagyu for premium local and international markets, Wagyu-cross weaners from Kimberley

### Livestock:

4,300 Wagyu breeders

### Pasture:

Native herbage, spinifex, buffel and irrigated Rhodes grass, maize for silage

### Soil:

Pindan sand

### Rainfall:

350mm

## RESEARCH UPDATE

### WHAT IT'S ABOUT

Designing the optimal intensive northern grazing operation

### WHY IT MATTERS

Improving data collection optimises intensive grazing systems

### WHERE IT'S UP TO

First project



Completed

Second project



Underway

### WHO IS INVOLVED

MLA Donor Company, Pardoo Beef Corporation



Irrigated pastures are used to finish cattle at Pardoo.  
Image: Pardoo Beef Corporation

# Gabbs' gift for autumn sub-clover action



**The Gabb family's Victorian property, 'Blacks Creek' has evolved in recent years, returning to a mixed farming operation after being leased out for 12 years under the guidance of brothers Simon and Alistair.**

Their focus on feedbase productivity has allowed them to nearly double stocking rates.

Simon and Alistair both completed degrees in agribusiness and worked on farming enterprises domestically and overseas before they came home to manage 3,500 composite ewes and 650ha of cropping in the state's western district.

On their return, they set their sights on developing the feedbase which, last year, powered their turn-off of 2,515 trade lambs as well as finishing all ewe lambs (800 replacements and 1,359 culls).

The Gabbs have focused on increasing the feed on offer going into winter and turning off more kilograms/hectare in the spring from green feed. They aim for 1,700kg dry matter per hectare (DM/ha) two weeks before lambing (or on June 10).

Understanding whether grasses or clovers would best achieve their goal was a critical decision in their pasture management.

"Early on, there was a lot of effort in producing more kilograms per hectare from grasses, finishing lambs off the spring flush, not fully understanding the real potential of sub-clover or how that complements the breed of sheep that we run," Simon said.

One source of information was Southern Farming Systems' research into perennial pasture systems, which has been supported by MLA.

In the first year, even at a low stocking rate of 4.5 ewes/ha, the Gabbs still struggled to finish lambs to a saleable live weight of above 42kg before the spring cut out. Lambs grazing these grass-dominant pastures had an average daily gain of 200–250g.

Fast forward five years, and the Gabbs have increased their stocking rate to 8.5 ewes/ha and consistently achieve lamb growth of more than 350g/day on 70% sub-clover dominant pastures.

*Simon Gabb with containment areas the family has developed for ewes, to create a food-on-offer wedge in paddocks for lambing.*  
Image: Jess Brogden

### Autumn strategies

At this time of year, Simon said the focus of their autumn management was to kickstart clover pastures.

“The big challenge for us with our pastures is, given we run a high stocking rate per hectare, when the season breaks we need to grow as much biomass as possible before winter comes,” he said.

“Come March, our paddocks have had excess litter removed so sub-clover can germinate when it starts to rain.

“Ewes go into containment yards to create a feed on offer wedge for lambing. We work on a minimum of 1,500kg feed on offer at the time of lambing, so hopefully they go into the paddock with about 1700kg DM/ha a couple of weeks before lambing starts in late June.”

If the Gabbs receive a good, early break they can reach their food-on-offer targets sooner and take stock out of containment.

“We do plant early winter wheats which becomes a release valve so we can graze our wheats and can keep our pasture growing.”

A positive flow-on effect from putting ewes into containment or grazing them on wheat crops is that the sub-clover stands have an opportunity to develop their true leaves so that by winter, they are well established and not being damaged by early grazing.

“This gives strong sub-clover performance in winter when we need it. If we have a strong healthy plant established, it’s going to perform far better than one that has had to struggle to establish in the winter and suppressed for the rest of the year,” Simon said.

Pasture renovation is now a key event in the Gabbs’ calendar of operations.

Perennial ryegrass/ sub-clover and phalaris/ sub-clover stands are the dominant perennial pastures now with the stoney country remaining relatively unimproved.

For the renovated pastures at Blacks Creek, 6kg/ha of sub-clover was sown with either ryegrass or phalaris. Three different sub-clover cultivars are used in their mix: Rouse<sup>®</sup>, Yanco<sup>®</sup> and Antas.

“In year one of pasture establishment we didn’t apply a huge amount of stocking pressure but we made sure we applied it at the right time to try to keep grazing the pasture down with the aim of getting more seed set in spring,” Simon said.

“We only did this to the phalaris/sub-clover pastures because phalaris is slow to establish. The ryegrass/ sub-clover pastures can be grazed at full stocking rate from year one.

“The phalaris pasture was challenging as it was very slow to establish. We had to make sure the phalaris established but also make sure we had enough grazing pressure to keep the sub-clover semi-grazed down to get light into it and promote leaf growth.

“Sub-clover choice was about trying to spread flowering dates and maximise production across spring.” ■

*\*This case study was written by Jess Brogden, Southern Farming Systems, for a project supported by MLA.*



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To read how the Gabbs manage their feedbase in summer, read their story at [mla.com.au/summer-subclover](http://mla.com.au/summer-subclover)

Southern Farming Systems: [sfs.org.au](http://sfs.org.au)

#### Feedbase toolbox

MLA supports the development of practical tools for producers, which are available at MLA’s resource hubs:

Feedbase: [mla.com.au/feedbase](http://mla.com.au/feedbase)

Soils: [mla.com.au/healthy-soils](http://mla.com.au/healthy-soils)

## SNAPSHOT:

**Simon and Alistair Gabb**, Tarnawa Pastoral Company, Skipton, Victoria



**Area:**  
1,100ha

**Enterprise:**  
Composite breeding flock, cropping: cereal, oil seed and pulses

**Livestock:**  
3,600 Lambpro ewes, turning off trade lambs and surplus ewes

**Pasture:**  
Mixture including unimproved native grasses in stoney barriers (40%), phalaris and sub-clover, perennial ryegrass and sub-clover, and annual ryegrass and balansa clover (60%)

**Soil:**  
Volcanic plains, buckshot in subsoils to loam

**Rainfall:**  
600mm

## LESSONS LEARNED

- > Sub-clover drives animal and pasture production.
- > Creating a feed wedge over autumn allows sub-clover to get well established to maximise winter growth.
- > Grazing pressure at the right time in a new pasture is important to get good establishment and growth of sub-clovers.



Simon Gabb has increased stocking rates through strategic grazing and feedbase management.  
Image: Jess Brogden

# What you need to know for best practice pain relief

**Changing consumer and community expectations mean the use of pain relief while conducting routine livestock husbandry practices is becoming essential to ensure the sustainability of the industry.**

While pain relief should always be applied where painful procedures are undertaken, a sustainable industry hinges as much on the pursuit of alternative, non-aversive husbandry techniques as it does on pain relief.

**Here's a look at some of the best practice strategies for pain relief.**

## **The best pain relief medicine for the job**

Registered medicines for pain relief in sheep and cattle are either local anaesthetics or non-steroidal anti-inflammatory drugs (NSAIDs).

Local anaesthetics intend to provide immediate relief for

an animal, whereas NSAIDs are used for longer-term relief as analgesics.

These medicines can be administered topically, by injection, or by buccal administration applied through the cheek or mouth lining, which allows absorption into the bloodstream without the need for swallowing.

Depending on the husbandry procedure in question, different applications will be required.

Currently, it's recommended producers use a combination of local anaesthetics and NSAIDs, ideally before the surgical husbandry procedure is done, to achieve the broader spectrum and longer duration of a multi-modal analgesic approach when undertaking painful animal husbandry procedures.

Where the creation of open wounds is unavoidable, topically applied analgesics can be administered to the affected area immediately

after the creation of these wounds. This applies to both sheep and cattle.

## **Alternative practices for sheep**

The provision of pain relief for sheep husbandry procedures such as mulesing, tail docking and castration is increasingly an expectation for industry – pain relief for mulesing is mandated in Victoria.

**It's important for producers to understand the best practice methods for providing pain relief, and whether they can adopt alternative practices to remove the need for these husbandry procedures in the future.**

In many instances, animal husbandry procedures are crucial for the survivability and long-term wellbeing of a flock or herd.

However, producers should regularly assess this need and whether alternative measures can be carried out. For example, plainer breeches can be selected for Merino sheep within breeding decisions, in combination with optimal shearing time and additional crutching, to remove the need for mulesing.

These alternatives not only ensure a greater level of animal welfare and community trust, but align with Sheep Producers Australia (SPA) policy that prime lambs should not come from mulesed dams, helping producers meet industry standards.

## **Pain relief for sheep**

Where alternatives are unavailable (or have not had time to take effect, such as breeding plainer breeched sheep) and husbandry procedures need to be carried out, producers should always follow recommendations provided on the registered animal medicines used.

Where possible, husbandry procedures should also minimise the creation of open wounds, such as through using elastrator rings instead of knife castration and when tail docking.

No matter the methods used for tail docking, castration and other activities, a combination of anaesthetics and analgesics (NSAIDs) is recommended for the greatest pain relief results.

## **Pain relief for cattle**

Castration is a routine procedure in most southern and many northern beef



*The provision of pain relief for sheep husbandry procedures such as mulesing, tail docking and castration is an expectation for industry.*



## Are you using the new NVD?

There's been positive uptake of the latest version of the Livestock Production Assurance National Vendor Declaration (LPA NVD) – the only version now accepted for all species of livestock being transferred.

Version 0720 of the LPA NVD has been available since 1 July 2020, as part of a number of changes made to the LPA NVD last year to help ensure Australia's integrity system is simple to use, valued by industry and underpins livestock traceability and consumer trust in Australian red meat.

The changes, made in response to recommendations by SAFEMEAT, include:

### All species

- removal of Part C (Agent's Declaration) – a section rarely used by industry and not required for any legislative reason
- inclusion of 'Destination PIC' section – this is a legislative requirement in Western Australia and Tasmania, although optional for other states

### Sheep

- inclusion of a section on the number of electronic devices included in the consignment to accommodate the mandatory use of electronic NLIS identification in Victoria and its increasing use in other states.

MLA subsidiary, Integrity Systems Company (ISC), carried out an extensive engagement campaign throughout 2020 to ensure producers were aware of this important change and could act in a timely manner to be ready on 1 January, which was the deadline for using the previous version.

Transfers completed using incorrect LPA NVD versions are a breach of the LPA rules and standards.

### eNVDs

In place of using hard copy NVDs, producers are encouraged to utilise the electronic NVD (eNVD) system, which uses the most current version.

More producers than ever are using eNVDs – up from approximately 9,000 in April 2020 to around 30,000 in February this year.

Hard copy NVD books for version 0720 can be ordered at no cost via a producer's LPA account until 30 June 2021. ■

✉ [info@integritysystems.com.au](mailto:info@integritysystems.com.au)

📄 Check out the eNVD how-to guide on the ISC website, which outlines the steps to complete an eNVD, including how to complete consignment paperwork using the system if internet access is unavailable at the loading site: [integritysystems.com.au](http://integritysystems.com.au)

For further information and assistance regarding LPA NVDs and eNVDs, please contact the ISC Helpdesk on 1800 683 111.



Polled gene selection is an important step for the cattle industry.

herds, due to the age of turn-off of steers, issues around safe handling and animal management, effects on eating quality, and the unacceptable welfare implications of incidental pregnancies in female cattle presented for processing or live export.

Dehorning is also carried out routinely on animals with horns and scurs as a means of improving animal welfare and workplace safety.

Pain relief should be used for both practices.

### Alternate husbandry practices

There's currently no established alternative pathway for leaving male animals unsterilised in Australian beef production systems. However, producers should always consider the need for all husbandry procedures, and ensure they are up-to-date with industry regulations and best practice management strategies.

Polled gene selection is an important step for the industry to cease the painful practice of dehorning cattle (currently 73% of registered Australian cattle are polled, according to the Australian Beef Sustainability Framework).

Introducing polled genetics into herds will decrease dehorning and improve the overall welfare of the herd.

### Pain relief for cattle husbandry

While there's insufficient research to suggest the best form of pain relief for castration and dehorning, a combination of both local anaesthetics and NSAIDs should achieve the highest level of pain mitigation. ■



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Check out MLA's pain relief hub resources that outline best practice husbandry in sheep and beef cattle, as well as available products for pain relief, their costs, and when they're suitable to use: [mla.com.au/pain-relief](http://mla.com.au/pain-relief)

Australian Beef Sustainability Framework: [sustainableaustralianbeef.com.au](http://sustainableaustralianbeef.com.au)

MLA genetics hub: [genetics.mla.com.au](http://genetics.mla.com.au)

For more information on MLA-supported research into the polled gene in cattle, read page 26 of the December 2020/January 2021 edition of *Feedback*: [mla.com.au/feedback](http://mla.com.au/feedback)

# Carbon accounting shines

**When Victorian producer Peter Star undertook carbon accounting for his livestock enterprise for the first time in 2020, he learnt two things: carbon accounting is not as hard as he thought it would be, and he's a fair way from being carbon neutral.**

With his industry involvement as a Cattle Council of Australia Director, and a Victorian Farmers Federation Livestock Councillor, Peter's very conscious of just how topical carbon accounting will continue to be.

"My main reason for doing the account was just to see what it's about. Having done it, I thought it was a great exercise. It's good to be in a position where you can advise people what to look at," he said.

Peter now views his carbon account as a starting point and an important step in seeking community support for producing beef in environmentally friendly farming systems.

"While I might not necessarily become carbon neutral, it's given me something to strive for and I've identified how to head in that direction," he said.

**"Currently we have access to markets that are driven by quality assurance (QA) and I believe in the future, a producer's level of carbon accountability may open the door for market access as part of a QA program.**

"From a community point of view, it's important to have leaders who understand how this works and can lead their community through the early stages."

Peter recommends interested producers undertake carbon accounting to help them understand and identify their challenges.

"It would be a great exercise to undertake as a community group – say with your local Landcare group – where you sit down for a session and work through how you create a carbon account," he said.

## Future focus

"A simple way for our farm to be carbon neutral would be to devote 20% of the property to trees. That sounds easy, but the reality is that's not going to happen," Peter said.

"One way to achieve this would be to fence around all the dams and creeks and plant those areas out to trees and trough the water to the paddocks.

"Well, that works if the dams and creeks have water in them – but the three years of 2017–2019, with less than 50% annual rainfall, dried up creeks and dams, are proof of the futility of that idea.

"Planting trees is a lot of work and you need good labour sources around to help with it.

"On the other hand, improving perennial pastures is relatively easy. Once you have your seeder set up it is pretty simple."

With these realities in mind, Peter has identified four areas which would support balancing his carbon account in the future:

### 1. Increasing tree and native vegetation plantation areas

Peter will plant 5ha of trees around a lagoon on his property, which has been empty in recent years. He's looking at more areas which could be dedicated to trees as he sees the benefits beyond just offsetting emissions, such as improved shade and shelter for livestock and increased biodiversity.

### 2. Improving pastures

Peter plans to use more phalaris when he renovates pastures, because of its deeper root system compared to some other perennial grasses. While phalaris needs to be well-managed, as a deep-rooted perennial it has potential to build soil carbon while providing a long-term feed supply.



Victorian cattle and sheep producer, Peter Star.

### 3. Turning cattle off sooner

When it comes to turning cattle off faster, Peter looks to genetics and herd management activities to support productivity gains. For instance, when cattle reach their sale weight faster, it shortens their time in the paddock producing methane. This lowers the emissions intensity of a production system.

"Genetics will be part of the answer. What used to take three or four years to do with cattle (grow a 600–700kg animal) can now be done in two years," he said.

He also ensures all cattle perform with early pregnancy scanning and by culling empty breeders.

### 4. Encouraging dung beetle activity

As dung beetles feed on manure, they incorporate carbon into the soil.

Peter is participating in MLA-supported dung beetle trials and, after earlier releases of dung beetles by Upper Murray Landcare groups, populations are now widespread and highly effective. ■

# es light on opportunity



## LESSONS LEARNED

- > Carbon accounting is valuable to know if you're on the right track, especially if you decide to pursue carbon neutrality.
- > Build your understanding of how the livestock sector is working towards carbon neutrality through industry engagement.
- > Plan ahead to ensure future plantations meet carbon accounting guidelines.

## SNAPSHOT:

**Peter Star**, Upper Murray region, Victoria



### Area:

1,200ha owned and leased

### Enterprise:

Breeding cattle and sheep

### Livestock:

450 cows, 500 first-cross ewes

### Pasture:

Sub-clover based with ryegrass, 30ha of phalaris, 10ha of native local tree species including red gum, red and yellow box and wattles

### Soil:

Clay loam to grey

### Rainfall:

700mm



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For more information on the Australian red meat and livestock industry's target to be carbon neutral by 2030 (CN30), visit [mla.com.au/cn30](http://mla.com.au/cn30)

Read about the benefits of dung beetles at [mla.com.au/dung-beetles](http://mla.com.au/dung-beetles)

MLA's genetics hub is a one-stop shop for breeding resources: [genetics.mla.com.au](http://genetics.mla.com.au)

## Get your business CN30 ready

Here are seven ways to be on the front foot towards carbon neutrality.

### Now

1. Arm yourself with the right knowledge. Identify your emission sources, know what carbon storage options are available and document these in your carbon account.  
[mla.com.au/carbon-account](http://mla.com.au/carbon-account)
2. Consider herd or flock management practices to improve livestock diet, breeding efficiency or structure to reduce methane emissions per kilogram of live weight produced.  
[mla.com.au/erfactsheet](http://mla.com.au/erfactsheet)  
[mla.com.au/reducemethaneemissions](http://mla.com.au/reducemethaneemissions)
3. Identify shade and shelter options on your property. Integrate trees and shrubs into grazing systems for improved carbon storage and animal health and biodiversity benefits. Your local Landcare group can help you choose the right tree and vegetation species for your region.  
[mla.com.au/tree-grass-balance](http://mla.com.au/tree-grass-balance)

### Within three years

4. Plan for delivery and distribution of new feeds and supplements that reduce methane emissions from livestock and improve animal growth rates. This will enable more red meat to be produced for the same or reduced methane emissions.
5. Establish deep-rooted, palatable pastures and legumes to improve soil carbon levels and lift animal productivity.

### Longer term

6. Consider what mix of pastures, legumes and trees is suitable to maintain livestock productivity in future weather and climate scenarios.
7. Look at collaborative supply chain arrangements to mitigate financial, environmental and market risks, as well as the impact on business inputs and output. ■

# Industry teams up to fight disease

**Australia is better placed to deal with an emergency animal disease outbreak thanks to the relationships forged and resources developed as part of the Foot and Mouth Disease (FMD) Ready Project.**

Since 2016 the project has used FMD as a model to examine ways in which Australia could better prevent, control and manage an emergency animal disease outbreak and return to trade as soon as possible.

The project is led by CSIRO and the four integrated sub-projects focus on:

1. Rapid diagnostics and vaccination strategy preparedness
2. Farmer-led partnership for improved surveillance
3. Outbreak decision support tools
4. Disease transmission path analysis.

Sub-project 2, which has now finished, was led by CSIRO principal scientist Dr Yiheyis Maru. His team took a bottom-up approach to develop trusting relationships with producers and local animal health stakeholders – something research had shown was lacking.

“The aim was to foster collaboration, because trusting partnerships throughout the entire value chain are essential for good surveillance, biosecurity and reporting,” Yiheyis said.

These partnerships were developed across five Innovation Pilot Groups, which were formed in 2018 for each FMD-susceptible livestock industry:

- Beef – Durong, Queensland
- Sheep – Esperance, WA
- Goat – Roseworthy, SA
- Dairy – Maffra, Victoria
- Pork – Launceston, Tasmania.

The groups were facilitated by researchers from CSIRO, Charles Sturt University and Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES), and had a

range of members including producers, public and private veterinarians, livestock agents, shire council staff, natural resource management officers, and local agribusiness representatives.

Interviews were held with group members to understand the local needs, challenges and opportunities in improving on-farm surveillance, and the results were presented at the first meetings.

In their quest to find local solutions to these challenges, Innovation Pilot Groups’ activities included:

- **Beef:** training in post-mortem sampling; discussed remote animal health monitoring with a technology provider; developed a biosecurity and surveillance chain of response guide
- **Sheep:** see story opposite
- **Goat:** formed a new producer network and developed a producers’ guide to goat diseases handbook
- **Dairy:** developed articles on the need to report early to reduce the economic and social impact of an outbreak; wrote to government to discuss changing the balance of public veterinarians’ responsibilities to be less compliance-focused and the need for more resources to form relationships and support producers
- **Pork:** training on herd health, nutrition, post-mortem, and African Swine Fever preparedness.

## Where to from here?

All the lessons learned from the sub-project will be shared in early 2021, but recommendations include:

- simply and cheaply scale out the partnership approach to communities by inviting other animal health stakeholders to join producer groups
- government and industry adopt policies that support a bottom-up partnership culture to solve local issues, locally.

The groups will continue in various capacities, including as advisory bodies to industry and governments. ■

## RESEARCH UPDATE

### THE PROJECT

The Foot and Mouth Disease Ready Project


### WHAT IT'S ABOUT

Preparing Australia for an emergency animal disease outbreak to facilitate a speedy return to trade, using FMD as a model

### WHY IT MATTERS

Responding to and recovering from an FMD outbreak could cost Australian FMD-susceptible livestock industries \$50 billion over 10 years

### WHERE IT'S UP TO

 Ongoing

### WHO IS INVOLVED

This project is supported by MLA, through funding from the Australian Government Department of Agriculture, Water and the Environment as part of its Rural R&D for Profit program, and by producer levies from Australian FMD-susceptible livestock (cattle, sheep, goats and pigs) industries and Charles Sturt University (CSU), leveraging significant in-kind support from the research partners.

The research partners for this project are the Commonwealth Science and Industrial Research Organisation (CSIRO), CSU through the Graham Centre for Agricultural Innovation, the Bureau of Meteorology (BOM) and the Australian Department of Agriculture, Water and the Environment, supported by Animal Health Australia (AHA).

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🖥 FMD Ready project:  
[research.csiro.au/fmd](https://research.csiro.au/fmd)

# FMD provides model for disease surveillance

**W**A sheep and cattle producer Erica Ayers knows better than most the devastation a foot and mouth disease (FMD) outbreak could wreak on Australia's livestock industries – and she said it's just one disease producers need to be on the lookout for.

Erica was working as a vet in the UK during the 2001 FMD outbreak, which forced the slaughter of more than six million sheep, cattle and pigs, and cost the country more than 8 billion pounds (approximately \$A19 billion).

“Being the vet on the ground in charge of total flock and herd slaughter on infected farms is a memory that will stay with me forever,” Erica said.

For the past two years Erica has been part of the FMD Ready Project's Sheep Innovation Pilot Group (see story opposite) which was formed in conjunction with the Esperance-based ASHEEP producer group.

As a member of ASHEEP's animal health and biosecurity subcommittee, and with her firsthand knowledge of FMD, Erica could see the merits of the project.

“As a group, we could see the partnerships and strategies that would help in an FMD outbreak would be directly transferable to other diseases, whether endemic or exotic.

“FMD is a good example of how surveillance failure can have catastrophic consequences, but there are many other diseases producers need to look out for as well.”

## Impacts and risks

Based on her experience in the UK, Erica said potential impacts of an FMD outbreak for Australian producers and their communities could include:

- slaughter of large numbers of cloven-hooved animals on FMD-affected farms
- immediate stock standstill on all other farms, leading to loss of incomes and on-farm welfare issues
- immediate loss of export markets, with subsequent domestic market collapse due to over-supply
- shutdown of free movement of people in affected regions, with particular impact on tourism and regional economies.

Erica believes the greatest FMD risk factor in Australia is complacency around international travellers,

particularly those bringing in food.

The Sheep Innovation Pilot Group developed resources to address this risk, including an overseas worker induction flyer alerting employers of the disease risks and biosecurity signs aimed at travellers coming into Esperance.

The group also developed resources for producers, such as a livestock disease surveillance tool, a flyer to educate small-scale landholders about disease management, and a pilot WhatsApp group, in conjunction with a local vet practice, to share livestock disease and health alerts. ■



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FMD Ready project:  
[research.csiro.au/fmd](http://research.csiro.au/fmd)  
MLA biosecurity resources:  
[mmla.com.au/biosecurity](http://mmla.com.au/biosecurity)  
ASHEEP producer group:  
[asheep.org.au](http://asheep.org.au)

## SNAPSHOT:

Erica Ayers and Phil Cleghorn, Esperance, WA



**Area:**  
3,000ha across three properties

**Enterprise:**  
Beef cattle and self-replacing Merinos, with excess ewes joined to White Suffolk rams for crossbred lamb production

**Livestock:**  
750 Angus cows, 2,500 Merino ewes

**Pasture:**  
Clover, ryegrass, vetch, serradella, kikuyu

**Soil:**  
Coastal sandplains

**Rainfall:**  
550–650mm across the properties

*Below: Phil Cleghorn and Erica Ayers.  
Image: Jarrod Lucas, ABC Goldfields*



# Keeping a finger on the industry pulse



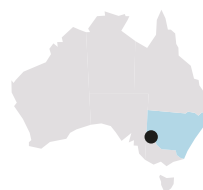
Angus Whyte, pictured with his wife Kelly, is always on the lookout for new knowledge.

## LESSONS LEARNED

- > Take opportunities to learn from others.
- > Be prepared to constantly improve and change the way you do things.
- > Look after your psyche as well as your pocket.

## SNAPSHOT:

Angus, Kelly and Mitchell Whyte, Wentworth, NSW



### Area:

31,000ha across two properties (owned and leased)

### Enterprise:

Mainly Merinos, some Dohnes, some joined to White Suffolk

### Livestock:

Joining 4,500 ewes this year in restocking phase following three years of drought

### Pasture:

Native pastures and extensive rangeland grazing

### Soil:

Variable – self-mulching clays on floodplains to sandy ridges, some sandy loams

### Rainfall: 250mm



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MLA is hosting MeatUp Forums across NSW, SA, southern WA and south-west Queensland and BeefUp Forums across Queensland, NT and northern WA. Find one near you at: [mla.com.au/meatup](http://mla.com.au/meatup) or [mla.com.au/beefup](http://mla.com.au/beefup)

**S**outh-west NSW sheep producer Angus Whyte is always on the lookout for new ideas and resources to use in his business.

He's not one to sit back and wait for these ideas to arrive, as he believes the key to maintaining a productive enterprise is a two-way flow of information.

Angus is regional chair for the Southern Australia Livestock Research Council (SALRC), which gives producers the opportunity to drive the future direction of MLA's levy payer-funded research and development for their area.

He's helping to organise the new series of MLA's MeatUp Forums across southern Australia, to keep information flowing and build networks for producers.

"These forums allow producers to hear what research is being done, what requirements and expectations consumers

have, and what options are out there to assist us in livestock production," Angus said.

The MeatUp events also keep producers informed about MLA's other programs so they can tap into a broad range of information and support.

**"There are so many options to manage livestock – refocusing your current business a few degrees might just align you with a different, more lucrative, market," Angus said.**

### Ready for opportunity

Angus has seen the impact to his own business from being flexible and aligning to opportunities as they come along.

Angus, his wife Kelly and 17-year-old son Mitchell are currently restocking after prolonged drought. Angus

takes a pragmatic approach to rebuilding the business.

"Restocking is about lining your expectations up," he said.

"We buy stock that we can make money from – they don't have to be our perfect animal.

"But for your own peace of mind, it's good to have some stock that you are really happy with, some that know your country, that you hang on to during the drought. It's tough on your psyche to have to sell everything."

Angus said it's important to stay focused on moving forward.

"You have to make sure you know where the market is going and that you're up to date with new technology."

His tip for other producers in the search for continuous improvement is to tap into the resources of skills and people that MLA has and to help influence the direction of research that matters to their region. ■

# Biocrusts offer natural solution

**N**orthern producers will have new information on how fire and grazing can be managed to optimise nitrogen inputs by biocrusts to improve the productivity of grazing lands, through an MLA project underway in the NT and Queensland.

Researchers at the University of Queensland are putting biocrusts – the living skin on the surface of the soil – through their paces at the Kidman Springs fire experiment 400km south of Darwin and the Wambiana grazing trial in north Queensland. (These sites are run by the Northern Territory Department of Industry, Tourism and Trade and the Queensland Department of Agriculture and Fisheries, respectively.)

**Here's why biocrusts are so important:**

## What are biocrusts?

Biocrusts – which appear all over the world – are found in the top 1–2cm of soil. They are composed

of lots of tiny organisms including cyanobacteria, fungi, green algae, bacteria, lichens, liverworts and mosses. In tropical savannas, biocrusts are dominated by cyanobacteria and liverworts.

They grow when it's wet or dewy and become inactive when it's dry, just like plants.

## But wait, aren't soil crusts a bad thing?

There are two types of soil crusts. Living biocrusts are distinct from dead physical crusts that form on degraded soils. Physical soil crusts can inhibit water infiltration and plant growth. Living biocrusts enhance soil moisture, soil fertility and plant growth.

## What do biocrusts do?

They stabilise the soil surface by binding soil particles together, preventing erosion from wind and water.

They photosynthesise and fix carbon by pulling it out of the air and incorporating it into the soil to enhance soil carbon.

They fix nitrogen. Most cyanobacteria fix nitrogen (N) out of the air just like

legumes do. They use the N to grow and store any excess N they fix in a slimy layer around their cells.

When it rains, much of this plant-available N enters the surrounding soil and is available for pastures.

In the dry season the biocrusts dry out and partly disintegrate. This nutrient-rich biocrust is incorporated into the soil as organic matter with early wet season rains. The amount of nitrogen that biocrusts fix every year is similar to the amount of nitrogen fixed by native legumes in grassy tropical savannas.

## What are the researchers looking at?

Soil fertility is a major limitation to pasture growth in tropical savannas, but it doesn't pay to add fertilisers at these extensive scales.

Researchers are testing if grazing and fire can be managed to maximise the natural carbon and nitrogen inputs by biocrusts into soils, and enhance soil fertility and productivity in tropical savannas.

## What effect do fire and grazing have on biocrusts?

The right amount of fire can enhance biocrusts by removing litter, trees and shrubs that would otherwise compete as ground cover.

Biocrusts in Australia's tropical savannas, like the native vegetation, have evolved with fire and are well-adapted to it. Biocrusts from Kidman Springs grew just as well and had similar carbon and nitrogen levels after fire as unburnt sites.

## RESEARCH UPDATE


### WHAT IT'S ABOUT

Managing biocrusts to boost the natural regeneration of nitrogen in northern grazing lands

### WHY IT MATTERS

Producers can manage fire and grazing to capture the benefits of biocrusts to soil health

### WHERE IT'S UP TO

 Part-way through

### WHO IS INVOLVED

MLA, University of Queensland, Northern Territory Department of Industry, Tourism and Trade, and Queensland Department of Agriculture and Fisheries

Grazing can also potentially open up spaces for biocrusts by reducing plant cover, but biocrusts are susceptible to heavy trampling.

At the Wambiana grazing trial near Charters Towers, biocrust cover was higher and healthier with moderate grazing than with heavy grazing. Future work will examine what this means for nitrogen inputs. ■



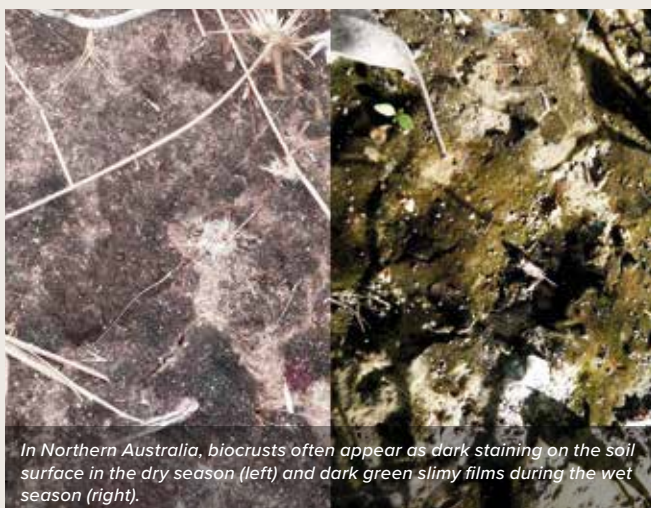
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For more information on the Kidman Springs fire experiment, contact Robyn Cowley at [robyn.cowley@nt.gov.au](mailto:robyn.cowley@nt.gov.au)

To learn more about the biocrust project, contact Wendy Williams at [wendy.williams@uq.edu.au](mailto:wendy.williams@uq.edu.au)



Read more about the grazing work at Wambiana here: [mla.com.au/wambiana](http://mla.com.au/wambiana)



In Northern Australia, biocrusts often appear as dark staining on the soil surface in the dry season (left) and dark green slimy films during the wet season (right).

# Looking outside the square for innovations

The red meat industry is constantly adapting and looking for new solutions to respond to challenges and take advantage of opportunities to advance productivity and profitability along the value chain.

That's why MLA is leading the way to find solutions from outside the industry, bringing in new ideas and technologies with a proven track record in other sectors to adapt them to the unique requirements of Australia's red meat and livestock industry.







MLA's Program Manager – Objective Measurement, Richard Apps, said seeking solutions from outside the sector enables collaboration with like-minded researchers to share knowledge.

"With these projects, we're tapping into the skills and knowledge of researchers from other sectors and the investments that have already been made into technologies," Richard said.

"If we can capture value from those investments it can bring new opportunities for red meat along the value chain."

Finding solutions from other industries also aligns with MLA's *Strategic Plan 2025* priorities to target investments to address the industry's big, complex challenges and develop new, high-value products to maximise the whole carcass. ■

This feature (pages 32–41) highlights some of MLA's collaborations with industries outside the red meat sector for new technological solutions, including harnessing new ideas from:

	<b>HUMAN ASSISTED REPRODUCTIVE TECHNOLOGIES</b>	<b>32</b>
	<b>HUMAN MEDICAL TECHNOLOGIES</b>	<b>36</b>
	<b>GAMING TECHNOLOGIES</b>	<b>37, 41</b>
	<b>THE MILITARY</b>	<b>38</b>
	<b>THE AVIATION SECTOR</b>	<b>39</b>
	<b>TELECOMMUNICATIONS</b>	<b>40</b>

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**HUMAN ASSISTED REPRODUCTIVE TECHNOLOGIES**  
to accelerate genetic gain in cattle

# Human embryo could drive ge



Dr Reon Holmes, Holbrook Vet Centre, NSW.  
Image: OGA Creative Agency

**H**uman assisted reproductive technologies (ART) offer many benefits to the livestock industry, including doubling the rate of genetic gain and increasing production, and MLA is investing in this area to increase industry's confidence.

The cattle industry has used ART – such as artificial insemination (AI) and embryo

transfer – for many years to drive genetic improvements.

While AI only carries the genes of the bull, technologies such as *in vitro* fertilisation (IVF) and multiple ovulation embryo transfer (MOET) combine genetics from both the sire and dam at far greater rates than seen during a normal pregnancy cycle.

However, despite the beneficial offerings of these technologies, IVF and MOET have only



# How technology is driving genetic gains in cattle



been modestly adopted by industry due to low and varying pregnancy rates.

MLA is investing in research to improve pregnancy rates through imaging and objectively assessing embryos – an approach which has been successful in human embryo transfers – to develop the industry’s confidence to adopt more ART.

Here, three of the people involved in the project provide a look behind the scenes of bovine ART.

## How the technologies stack up

IVF and MOET both contribute to improving the rate of genetic gain within the cattle industry as they focus on using the genetics of an elite bull and cow.

During the MOET process, eggs are artificially inseminated in a genetically superior cow and removed after seven days to either be frozen or transferred into recipient cows.

With IVF technology, eggs are removed from the donor female’s ovaries and fertilised in a lab before being placed in recipient cows.

MOET is more common in the cattle industry as it has better pregnancy rates than IVF, however IVF has potential to offer greater genetic gain in the industry as more eggs can be harvested from genetically superior cows, and at an earlier age of approximately six-months-old.

Dr Reon Holmes of Holbrook Vet Centre in NSW has been providing ART to the industry for more than 20 years. He said work to increase pregnancy rates in IVF and MOET is an important stepping stone for further adoption by the Australian cattle industry.

“With IVF, in fresh embryos we’re currently only seeing about 45–50% pregnancy rates, and in the frozen it’s around 25–35%, whereas with MOET we expect above 60%,” Reon said.

“We need to use frozen embryos to efficiently carry out IVF, so currently these rates are far too low for the cost of the technology when compared to MOET.

“Within our practice and as a general sentiment, clients tend to choose MOET over IVF because the cost per pregnancy is lower.”

Reon said while MOET is currently more viable for many, objective assessment work is important as the benefits of IVF are greater if pregnancy rates can be improved.

“If we saw the same pregnancy rates in both technologies, IVF would certainly be more beneficial to industry because we could shorten the generation interval by performing IVF on very young animals, which would help accelerate genetic gain.”

## Learning from human fertility to improve IVF

Embryologist and Adelaide University Professor Jeremy Thompson is leading the MLA project, which is using technology emerging from human ART to objectively assess embryos to improve pregnancy rates in cattle.

“One of the roles of the embryologist during IVF is to assess embryos and decide what morphological features characterise these as ‘good-looking’ from a pregnancy point-of-view,” Jeremy said.

**“This project aims to remove the subjectivity of this process through examining images of embryos with an artificial intelligence approach and determining what features relate to higher rates of pregnancy.”**

“We’re analysing the embryos in the same way as the

**Continued  
overleaf**

**Human embryo technology could drive genetic gains in cattle**  
*continued*

latest techniques for human embryo evaluation. This should remove the subjective nature of embryo evaluation, to work out which would be the most successful to transfer into donors.

“We’re using a special algorithm system that ‘breaks down’ the images and works out the features of the image that lead to pregnancy or not. Eventually, we will automate the process in the future.”

The long-term goal of the project is to improve IVF pregnancy rates by 15–20%.

“We may never be able to remove all of the variability from the process because we’re dealing with a biological system at the end of the day, but by limiting it with projects such as this one, the technology will be more appealing,” Jeremy said.

“If we can improve and automate reproductive technologies such as IVF and offset the cost of producing embryos through higher pregnancy rates, we’ll see significant genetic and production benefits.

“There’s still a lot of work to be done, because we need a lot more images and data to catch up to the human technology and to improve our algorithms and outcomes, but we’re getting closer.”

**The genetic benefits of IVF**

Director of the Davies Livestock Research Centre Professor Wayne Pitchford has been focused on improving cattle genetics for more than 30 years.



*Holbrook Vet Centre staff conducting embryo sorting and grading.*  
Image: Two Dots Creative Agency

**“The combination of genomic tools and assisted reproductive technologies is what gives us the opportunity to rapidly speed up genetic progress here,” Wayne said.**

“One of the biggest limitations to genetic progress in ruminants is the female reproductive rate, so using assisted reproductive technologies to increase this in elite females is major. This is something relevant to both IVF and MOET.”

Wayne said one of the benefits of IVF was the ability to harvest eggs and genetics from elite females at younger

**RESEARCH UPDATE**


**WHAT IT’S ABOUT**

Improving IVF pregnancy rates will advance genetic gain in cattle

**WHY IT MATTERS**

Rapid advancement of genetic gain will increase the industry’s market access, improve production and generate more profit from cattle

**WHERE IT’S UP TO**

 Part-way through

**WHO IS INVOLVED**

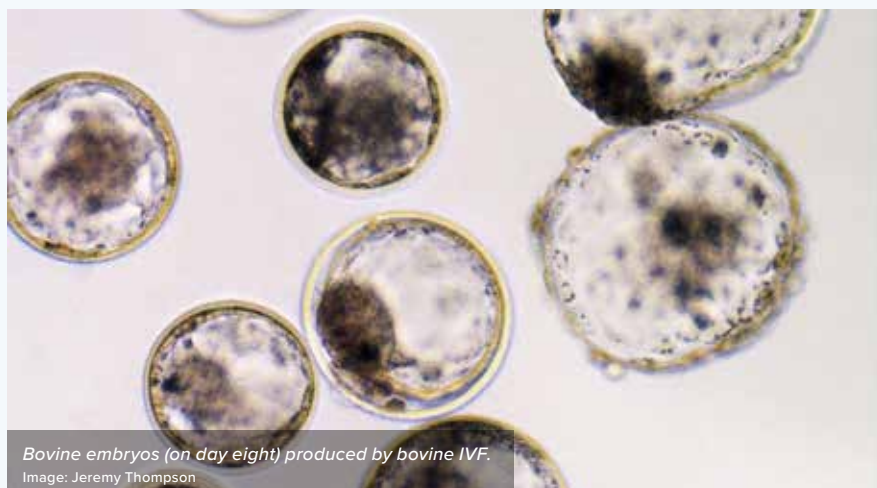
MLA, University of Adelaide, Holbrook Vet Centre

ages and multiply these, to reduce the generational interval and get animals with improved genetics on the ground faster.

“Using IVF, you can actually have calves born to an elite female around the time she’s reaching puberty, nearly a year earlier than by natural process.”

“The key to how these technologies improve genetic gain is in the breeder’s equation, which in essence means the smaller the number of animals needed as parents, the more intense the selection.

“IVF means you don’t need as many parents, which increases the top line, allowing genetic improvements to enter herds faster, which is why objectively looking at assessing embryos is so important.” ■



*Bovine embryos (on day eight) produced by bovine IVF.*  
Image: Jeremy Thompson



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Read more about the project here:  
[mla.com.au/embryo-transfer](http://mla.com.au/embryo-transfer)

# On target to speed up genetic gain

**T**asmanian cattle producers, the Archers, have used assisted reproductive technologies (ART) in their 'Landfall' Angus seedstock herd for more than 30 years to accelerate genetic gain.

Gerald Archer – father of Landfall's current co-principals Ed and Frank – started using embryo transfer technology in the mid-1980s to duplicate their own genetics and to introduce genetics from outside their herd.

"Then, in the mid-1990s, Dad brought in some embryos from the US, which we put into our recipient cows," Frank said.

"We flushed the resulting females at 13–14 months of age, which shortened the generational interval massively and allowed the duplication of those genetics within our herd."

While they do continue to buy embryos from other producers, the Archers' main focus is to identify and multiply the elite genetics within their own herd.

The Archers have seen a significant impact from using multiple ovulation embryo transfer (MOET) to duplicate elite genetics as it allows them to accelerate the rate of genetic gain and open new opportunities to utilise all their cattle for superior livestock production.

"With our program, we take the top 2% of our elite female cows each year and aim to collect 500–550 embryos from these, which will go into the bottom 20% of our cows.

"So even though these recipient cows don't meet the Landfall criteria to remain a seedstock female, they're still having genetically superior calves," Frank said.

"Embryo transfer also allows us to cull heavily on our females without the costs associated with this, because we aren't removing them from our system altogether, but are simply shifting them sideways into the recipient herd."

This creates a flow-on effect for the wider industry by accelerating genetic gain for their clients' herds.

"This is of increasing importance because, for

a profitable and sustainable industry, we need to concentrate on the impact of our own decisions up and down the value chain, and how they can benefit everyone from the breeder right through to the consumer," Frank said.

## Looking ahead

Although the Archers recognise the potential of IVF, they haven't adopted it yet because the current pregnancy rates achieved are too low for their program.

"In our MOET program, over the last five years we've achieved a minimum of 79% conception rate, and it's been as high as 86%," Frank said.

"With IVF, I've been quoted much lower conception rates, which would compromise our overall breeding program.

"We see the many benefits from the use of IVF, but within our program overall, where we're aiming to restrict our joining period to six weeks, we can't afford to recycle our recipients too many times.

"We look forward to the IVF technology improving to the point where we can achieve a balance with the pros and cons." ■

## SNAPSHOT:

**The Archer family,**  
'Landfall', Launceston,  
Tasmania



**Area:** 2,800ha

**Enterprise:**  
Angus seedstock, commercial ewes, prime lambs

**Livestock:**  
2,600 Angus females plus replacements, 4,000 composite ewes

**Pasture:**  
Ryegrass and clover blends

**Soil:** Sandy loam

**Rainfall:** 700mm



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Shopping for a high-performing sire? Visit MLA genetics hub: [genetics.mla.com.au](http://genetics.mla.com.au)



Turn to page 32 to read how MLA is supporting research to improve cattle pregnancy rates



## LESSONS LEARNED

- > Assisted reproductive technologies (ART) have potential to speed up rates of genetic gain.
- > Using ART can help to utilise all cattle for superior genetic breeding.
- > Accelerating genetic gain contributes to a profitable and sustainable industry.

Ed and Frank Archer on their family property, 'Landfall'.

# SUPPLY CHAIN

DELIVERING VALUE



## HUMAN MEDICAL TECHNOLOGIES

to measure intramuscular fat in red meat carcasses

# Medical **innovation**

**A** medical needle fitted with a camera that was developed to detect human cancer cells is now being used to measure intramuscular fat (IMF) in sheepmeat and beef.

IMF is a key indicator of eating quality in red meat and is particularly difficult to measure in lamb carcasses, which are not individually graded.

MLA is investing in new technologies dedicated to achieving this to unlock opportunities for the red meat industry.

A team of medical engineers from the University of Adelaide and livestock researchers from the Davies Livestock Research Centre have been collaborating on one such technology – a needle to estimate IMF scores in red meat carcasses.

The work is currently focused on lamb, in response to the industry's need for an IMF measurement to enable implementation of the cuts-based lamb Meat Standards Australia (MSA) model.

However, it also has application for the beef industry, such as to provide a hot IMF measurement tool to inform preliminary carcass sorting.

The research is led by medical engineer Professor Robert McLaughlin, who has spent the past 12 years developing optical technologies for human surgeries. He sees the opportunities in human medical technologies for livestock.

“While developing these technologies, one of the realisations we had was that almost every medical technology we've worked on has some equivalent usage in the livestock industry,” Robert said.

“One of these was a tiny camera made of optical fibre that we could fit in the end of a needle, with the goal of identifying cancer cells.

“What we found when testing it though was that it was really good at seeing individual fat cells, but not as good at seeing cancer cells.”

Robert said while the original goal of this technology hadn't been realised, the team saw a new potential use for it after speaking with MLA, who outlined the importance of IMF for eating quality.

**“We secured funding from MLA to adapt this needle, originally intended for medical usage, and try it out in hot and cold sheep carcasses, which demonstrated it has good potential for measuring and estimating the percentage of IMF in the meat.”**

The technology is being used in conjunction with the MLA Resource Flock based at Armidale, NSW, to assess the progeny of around 150 rams a year.

This provided researchers with access to lambs with a large range in IMF and cost-effective access to data, as these lambs are already being measured for IMF, among many other traits.

As well as measuring IMF, the needle offers other benefits for the red meat industry including:

- the ability to assess carcasses without damaging them
- an opportunity to provide feedback to producers who can use this information to improve ram selection and management decisions for the best returns.

*This needle is being used to objectively measure IMF in lamb.*  
Image: Robert McLaughlin

# n pinpoints IMF



Professor Robert McLaughlin.  
Image: Naomi Giatas

While the adaptation of the needle to lamb carcasses has been successful, Robert said there were still challenges to address, including ensuring the needle was able to work at processing speeds, something which wasn't as relevant for its use in medicine.

"We're still testing accuracy and are confident in the needle's ability to measure IMF, but another MLA Donor Company-funded project we're running is whether it can provide effective measurements at production speeds, something that will be critical for adoption," Robert said.

"If it can measure at speed effectively, from prior experience in releasing commercial medical products, I'm hopeful we can get this needle to commercial level in the next three years." ■

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Richard Apps  
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## RESEARCH UPDATE


### WHAT IT'S ABOUT

An intramuscular fat (IMF) needle is being developed to objectively measure eating quality in sheepmeat and beef

### WHY IT MATTERS

The ability to objectively measure eating quality will unlock opportunities for the industry, including new levels of market access and dedicated red meat feedback for producers

### WHERE IT'S UP TO

 Part-way through

### WHO IS INVOLVED

MLA, University of Adelaide

## Gaming tech ticks box

**O**ff-the-shelf gaming cameras are being used in the MLA-supported Advanced Livestock Measurement Technologies (ALMTech) program to take images of live cattle and carcasses.

Xbox cameras – which have strong motion-detecting and light-gathering capabilities – have been adapted to model 3D images of animals as they walk through a crush, as well as of carcasses in processing lines.

### How it works

Images are transferred to algorithms that can predict muscle score and fat composition, providing data on the value of the carcass or the progression of the animal towards being slaughter-ready.

Once the data has been captured, it can be loaded into prediction models such as BeefSpecs, helping producers to understand what decisions they can make to ensure they achieve the highest value from their products and meet market specifications. ■

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 Visit [almtechau.com](http://almtechau.com) for more information – a full list of ALMTech funding organisations is available at [almtechau.com/funding-organizations](http://almtechau.com/funding-organizations)



**GAMING TECHNOLOGIES**  
to assess carcass traits



THE MILITARY  
to automate labour-intensive tasks

# BREAKING RANK FOR AUTONOMOUS VEHICLES

**T**he red meat industry and the military have more in common than you might think: both require physical labour from their workforce and operate across a variety of terrains – and both are developing automated solutions for their job requirements.

An MLA-supported ag-tech program involving livestock producers is trialling a range of technologies including developing a US military track vehicle – the Wheeled Offload Logistics Follower (WOLF) – into a hybrid six-wheel drive vehicle, and using drones to address on-farm challenges and opportunities.

The WOLF vehicle is designed to autonomously complete labour-intensive tasks without human involvement, such as:

- distributing fodder and supplements to livestock
- gathering information about soil chemistry and moisture (such as water and soil sampling)
- refuelling water pumps
- checking fence lines.

**Farms of the future could see vehicles like these deployed to help address challenges around labour costs and shortages and reduce workplace injuries, while improving productivity through autonomously performing consistent operational requirements.**

The WOLF was originally developed by design and engineering company, HDT Global, for the US military as an infantry support vehicle.

MLA's Manager – Supply Chain Innovation, Darryl Heidke, said HDT Global was now working with MLA to adapt the vehicle for use in the red meat industry, which hasn't been as challenging as anticipated.

"In the military, the autonomous vehicle was designed to carry supplies like ammunition or wounded soldiers off the battlefield, so there was an opportunity for it to do the same in our industry but with things like stockfeed," Darryl said.

### Adapting to agriculture

To suit the unique requirements of Australian agriculture, the vehicle has been modified to include:

- a longer range as a diesel–electric vehicle
- autonomous capability and obstacle avoidance
- a low-pressure tyre kit to operate over soft soils without getting bogged
- ability to autonomously hitch and un-hitch trailers, to automate processes such as refueling vehicles or spraying paddocks for weeds.

The vehicle is also being concept-tested to work with autonomous aerial vehicle technologies such as drones.

For example, the drones could identify weeds in a paddock and send coordinates to the vehicle, which could spray out those weeds, all without human supervision.

"The projects to date have been about adapting the vehicle for Australian agricultural use and developing implements for its capabilities," Darryl said.

"Our next step in this project is doing more commercially relevant trials with producers and calculating the cost-benefit and return on investment of technology such as this.

"The vehicle is expensive technology, but if the use cases are successfully proven, it could provide on-farm labour support 24 hours a day and huge production benefits going forward." ■

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📖 Read more about MLA's ag-tech project with Carwoola Pastoral Company – which includes testing autonomous vehicles – in the May/June 2020 edition of *Feedback*, page 14: [mla.com.au/feedback](http://mla.com.au/feedback)

*Below: This autonomous vehicle is being put through its paces at Carwoola, NSW, for tasks such as delivering feed to cattle and assessing fence lines. Image: HDT Global*





**AVIATION INNOVATIONS**  
to scan carcasses and improve red  
meat integrity

# Eye to the sky for carcass scanner



*This image depicts how scanning technology used in the aviation industry is being adapted to advance objective measurement in the red meat supply chain.*

**A**irport baggage scanning technology is being put through its paces to measure carcass traits, and it could deliver more than \$36/head value.

It's a step towards improving the accuracy of measuring yield, eating quality and health attributes of carcasses, which underpins realising the full value of red meat products.

MLA-supported research into scanning carcasses has evolved from surface camera (which had limited accuracy) to subsurface x-ray technology. However, one of the challenges of medical x-rays is they can't operate for the long hours required in a red meat processing plant.

So, MLA looked outside the box and approached global airport baggage scanning companies, to see if devices used for detecting foreign objects in airport luggage could be adapted to food-related inspections, particularly red meat carcasses.

A collaborative project with MLA Donor Company and one of these companies, Rapiscan Systems, is now adapting Rapiscan's computed tomography (CT) scan technology to use in the Australian red meat industry, representing the first global collaboration of its kind.

It builds on the use of 2D imaging with dual-energy x-ray (DEXA) for lean meat yield measurement and precise robotic cutting, but the full 3D CT scans and multi-energy x-rays available through Rapiscan has additional benefits.

**The 3D scans differentiate between fat, muscle and cartilage tissues to predict eating quality attributes such as marble score or intramuscular fat and bone geometry for complex automated robotic deboning of the chine and vertebrae.**

The technology can also be applied to carcass and offal inspections to identify health-related issues, such as injuries, infection or contamination.

The CT x-ray would support a processor's inspector by providing more accurate objective reporting for producer feedback.

This per-animal feedback could be used by processors and producers to achieve the best value for their products and meet grid specifications.

Current economic modelling estimates the adoption of this technology will add \$36.48/head with optimised cutting lines, reduction in trim losses, and value chain objective measurement feedback. ■

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## Aviation AI for red meat

**Another way the red meat industry is drawing on aviation innovation is to identify risks.**

The aviation industry uses artificial intelligence (AI) algorithms to detect threats, by identifying risk factors such as unusual travel movements or baggage attributes.

MLA is considering applying the same algorithms to scan meat products to create a risk matrix, such as products that have arrived from 'at risk' zones, such as areas of Australia with liver fluke outbreaks.

Successful adaptation of these AI algorithms would help to further automate processing and improve the safety and integrity of Australian red meat products, bringing market access opportunities. ■

## RESEARCH UPDATE


### WHAT IT'S ABOUT

New multi-energy x-ray systems are leading the next wave of carcass scanning technology

### WHY IT MATTERS

Accurate whole-of-carcass scanning systems will help to predict eating quality, improve automation along cutting lines and provide detailed feedback to producers

### WHERE IT'S UP TO

 Part-way through

### WHO IS INVOLVED

MLA, Rapiscan Systems, ALMTEch (a list of ALMTEch funding organisations is available at [almtechau.com/funding-organizations](http://almtechau.com/funding-organizations))



SMARTPHONE TECHNOLOGIES  
to estimate carcass traits

# DIALING IN A NEW DECISION-SUPPORT TOOL



Masterbeef developer Darren Hamblin, using the Masterbeef system on his smartphone.  
Image: Darren Hamblin

**Data-driven decisions can be hampered by costly and complex tools, so Queensland Wagyu producer and engineer Darren Hamblin took matters into his own hands and turned his smartphone into a carcass-assessment tool.**

He developed the Masterbeef objective carcass measurement system to photograph and analyse carcasses and return data to producers, using an everyday technology.

### Driven by data

Darren, who runs 6,000 Wagyu cattle across Queensland, wanted more feedback on the performance of his stock during processing to guide breeding decisions.

He put on his engineering hat and tested a range of systems to assess their ability to capture data such as carcass traits.

“The various systems I tried were tricky to use and

didn't provide all the data I wanted, couldn't be moved easily and needed to be updated constantly, which helped me understand what I wanted to get out of a system if I were to produce one,” Darren said.

“Everything pointed to using smartphones to solve the problems – a device everyone owns and one that updates automatically.

“They also have exceptional cameras and processing power nowadays, so were perfect for what we were after.

**“The system became the perfect database through which I could analyse my own results to work out the best genetics and right animals to make money.”**

Masterbeef produces data on traits which influence eating quality and determine product value, such as meat

marbling distribution and score, fat and meat colour, with data processed through a smartphone app.

Darren ranks animals on their profit-driving carcass attributes, based on the carcass records of their progeny. This information guides decisions such as which sires to use for *in vitro* fertilisation (IVF) and artificial insemination and which ones to cull, and helps to identify the top cow lines to use in IVF embryo production.

### Industry interest

Originally, the system was developed by Darren to use in his own enterprise, but it wasn't long before industry came knocking on the door.

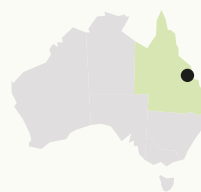
“When we started to see interest from others and recognised the power of the system as a decision-support tool at a lower price point, we needed to make some upgrades so that others could store their own data in the app and so it was secure,” Darren said.

The Masterbeef system now has 125 registered users in eight countries, including beef breeders who collect data to analyse genetic improvement in their herd, and red meat brand owners as a grading and marketing tool.

The next step for Masterbeef is to gain accreditation in key markets around the world, starting with Australian AUS-MEAT and Meat Standards Australia accreditation. The technology is also being used in lamb assessments with encouraging results. ■

### SNAPSHOT:

**Darren Hamblin,**  
Blue Mountain  
and Middlemount,  
Queensland



**Area:**  
20,000ha

**Enterprise:** Wagyu beef

**Livestock:**  
6,000 Wagyu cattle

**Pasture:**  
Pangola, Rhodes and  
buffel grass

**Soil:**  
Coastal river flats,  
self-mulching black soils,  
brigalow

**Rainfall:**  
1,500mm (Blue Mountain),  
650mm (Middlemount)



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Meat Standards Australia:  
[mla.com.au/msa](http://mla.com.au/msa)

Masterbeef:  
[masterbeef.com.au](http://masterbeef.com.au)

Masterbeef is being used by all the processors involved in the ANZ National Beef Carcass Competition as part of Beef Australia 2021. For more information, visit [beefaustralia.com.au](http://beefaustralia.com.au)





**GAMING TECHNOLOGIES**  
to engage the community about red meat

## Virtual reality of paddock to plate

**M**LA is using virtual reality (VR) headsets to immerse consumers in the Australian red meat 'Paddock to Plate' story, taking them on a journey from the production of red meat on-farm through to the dinner table.

The VR headsets allow users to interact with a fully immersive, 360-degree environment that puts them right in the heart of red meat production and helps them connect more strongly with the foods they enjoy.

The Paddock to Plate story and VR immersive experience was developed in response to MLA consumer insights, such as:

- only one in five meat eaters has a good understanding of the Australian red meat industry
- 20% fewer urban consumers visit cattle or sheep farms annually compared to eight years ago.\*

Immersing consumers in this story and helping them to be virtually 'present' through VR has been a vital way of addressing these statistics, and helps consumers be more informed about the hard work that goes into providing them with top quality red meat.

The Paddock to Plate experience has been shared with more than 100,000 members of the community since it launched in 2017. ■

(\*MLA Community Sentiment Research, Project Daisy 11, 2020)

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MLA used virtual reality headsets to connect consumers to how red meat is produced.

## Red meat returns the favour

**T**he red meat sector looks to other industries for innovative solutions to specific challenges, but it's not one-way traffic.

Here are two of the areas MLA invests in to develop new markets for red meat by contributing to other industries.

### Red meat by-products

The Wastes to Profits project is turning red meat waste into innovative products to generate additional value.

The project is creating alternative renewable energy technologies – biogas, bio-oil and solid fuels – from red meat waste, as cost-effective solutions to power processing plants, in and outside the red meat industry.

The project is also looking at how red meat waste, such as stomach contents, can be utilised in new bioplastics, to strengthen the red meat industry's sustainability credentials while also opening the door to additional revenue streams.

### A new way of thinking

MLA is supporting a University of Queensland (UQ) project which takes a fresh look at how on-farm decisions influence the wider value chain, by modelling scenarios to map progress towards carbon neutrality.

The project has produced a life cycle analysis model – known as System Dynamics – which can predict what the outcome of a decision made on-farm, such as planting a certain fodder crop or feeding stock for a certain number of days, will be up and down the value chain.

It aligns with the red meat and livestock industry's goal to achieve carbon neutrality by 2030 (CN30) by mapping a farm's carbon neutrality improvements, feeding valuable data back to both the producer and the industry on the progress in this space.

UQ is now adapting the methodology behind System Dynamics to other industries – such as mining – to map the environmental and sustainability consequences of their decisions across value chains. ■

### RESEARCH UPDATE

#### WHAT IT'S ABOUT

The red meat industry is sharing research and innovations to other sectors

#### WHY IT MATTERS

Expanding the red meat industry and offering solutions to other sectors opens new opportunities to create profit and achieve sustainability goals

#### WHERE IT'S UP TO

🕒 Part-way through

#### WHO IS INVOLVED

MLA, University of Queensland (System Dynamics), Queensland University of Technology (Wastes to Profits), Department of Agriculture, Water and the Environment

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🗨 Learn more about the industry's target to be carbon neutral by 2030 at: [mla.com.au/cn30](http://mla.com.au/cn30)

## Digital passport integrity chain

**T**he digital technology, blockchain, is being put through its paces to assess its potential to better support the integrity of the beef industry and revolutionise the relationship farming businesses have with consumers.

Here, Managing Director of Stockyard Beef Lachie Hart shares his insights into an MLA Donor Company (MDC) pilot program the business has undertaken that utilises blockchain technology to enhance product integrity and tell the provenance story of the Stockyard brand.

### Customer expectations

Stockyard is a third-generation family business, with operations across the supply chain from breeding to backgrounding, lot feeding and marketing.

“Stockyard have two branded beef programs – Wagyu and Angus – which are sold into 20 different countries around the world,” Lachie said.

“The expectation from our consumers, who are paying a premium, is for the integrity of the product to be well promoted and maintained.”

### A digital passport for the provenance story

The MDC pilot program is about capturing the provenance story of the Stockyard brand digitally.

It considers three retail markets around the world – Singapore, Dubai in the Middle East, and Yokohama in Japan – and is in the early planning and trial stage.

Imagine giving consumers a digital passport on every Stockyard steak they purchase.

### What’s blockchain?

**Blockchain is the technology that allows data and transactions to be recorded efficiently and in a verifiable and permanent way.**

“Our supply chain captures a significant amount of data from genetics to growth rates, seasonal conditions, rations, animal welfare compliance data, and carcass and grading data,” Lachie said.

All data is uploaded to a third-party provider supported by the Mastercard blockchain environment.

“We then use an Internet of Things (IoT) device to record in real-time the data on GPS location of the consignment, temperature, and other measurements.

“The project also allows us to collaborate a lot better with our in-market distributors and their inventory systems.”

However, the project offers so much more than traceability, compliance and provenance.

“The real value to us lies in the ability to engage with retailers and their consumers. It will also allow us to provide marketing and promotional materials directly to the consumer, who was already engaged by scanning our quick response (QR) code,” he said.

QR codes provide the basis for engaging with consumers.

“We currently use QR codes as the interface with our importers and distributors, and retailers’ inventory systems.

# strengthens



Stockyard Beef Managing Director Lachie Hart.  
Image: Stockyard

“Once primal cuts are portion cut into retail consumer packs, the QR code will be integrated with the retailer’s price sticker and the consumer will be able to scan the QR code using their mobile phone to get trusted information about the piece of beef they have chosen,” Lachie said.

### Tackling the challenges

Lachie said the biggest challenge had been determining the wants from the needs.

“Our supply chain captures so much data, it’s about determining what is needed within each market and distribution channel.”

The next challenge, he said, is reducing the drop-out of consumers.

“We’re expecting the initial uptake of consumers scanning the QR code to be relatively high because of the novelty factor. The challenge will be to find

innovative ways to get consumers to scan that second and third time.”

Beyond the retail sector, the next challenge will be replicating this system for the foodservice sector.

### Where the value lies

“We’ve always been open with our data, both up and down the supply chain, and the systems we have in place mean we’ve been able to easily verify the claims we’re making,” Lachie said.

**“The real motivation for us is the ability to provide more transparency in a trusted format and in real time to our distributors and retailers, but also to consumers, which is a huge positive.”**

The system has the added benefit of tackling any issues of food fraud.

“While we’ve only had two cases of food fraud over the business’ 62 years, when you invest so much in your product and brand, you will always be looking for ways to prevent fraud and this system will certainly do that.”

### Wider benefits to the industry

“Looking to the future, the big opportunity for the industry will be access to technology that can automatically collect compliance data throughout the supply chain and put all that data within a secured and trusted environment, like blockchain,” Lachie said.

“An automated, data-driven process of this nature has the potential to greatly strengthen the integrity of our industry.” ■

## LESSONS LEARNED

### Insights for other meat businesses

- > Clearly identify what the problem is you’re trying to solve before looking for the solution.
- > Identify what data is relevant and how it’s going to be relayed to the customer in a way that’s of interest to them as an individual.
- > Each market is very different, with different consumers, cultures and languages, so the messaging and information we share with our consumers is going to be very different depending on the market.

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🎧 Listen to an interview with Lachie Hart on episode 16 of MLA’s *On the ground* weekly podcast at [mla.com.au/on-the-ground](http://mla.com.au/on-the-ground)

# Have you met the greatest

**O**n the back of last year's successful **Greatest Butcher on Your Block** campaign – which saw a 15% increase in beef sales and a 9% increase in lamb sales – **MLA has again honoured Australia's butchers.**

MLA partnered with media personality Jessica Rowe for the second time over summer 2020–21 to share stories of the greatest local butchers' tips and tricks to make the most of lamb and beef.

Results from the second campaign included:

- 668 butcher shops participated in the campaign
- 4.9 million Aussies were reached through the media
- the campaign contributed to a 20% increase in volume for both beef and lamb sales across the independent retail butcher channel.

MLA's Business Manager – Retail and Corporate Butcher, Doug Piper, said the latest campaign created awareness of the local butcher by

reminding shoppers why shopping local is best and was well received during the COVID-19 pandemic.

"Butchers are the 'go-to' people for beef and lamb meal solutions so we encouraged shoppers to ask their butcher for red meat tips and included a 32-page kitchen guide as part of the path to purchase point of sale," he said.

"The recipe booklet received so much positive feedback that we turned it into an

e-book available on the Australian Beef website for all to enjoy." ■

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🖨 For more information on what's happening in the independent retail butcher sector visit: [australianbutchersguild.com.au](http://australianbutchersguild.com.au)

Download *The Greatest Kitchen Guide* e-book at [kitchenguide.australianbeef.com.au](http://kitchenguide.australianbeef.com.au)

Meet two of the butchers behind the block.

## A career from beauty to the beast



Bonnie Ewan started her career as a butcher with a bang, winning Australia's Best Apprentice Butcher in 2020.

### Bonnie Ewan Lucas Meats, Bronte, NSW

Bonnie is the first female butcher to work at Lucas Meats, a family-owned business that has been operating for more than 65 years in Sydney's eastern suburbs.

Bonnie's path to butchery may have been unique but it proved to be the right one when, in 2020 at the age of 25, she won Australia's Best Apprentice Butcher.

She'd been juggling her studies in make-up with working six days as a chef but, in a quest for a better work-life balance, Bonnie decided to do a trial in a butcher shop.

"I fell in love with it on the first day and signed up as quickly as I could for an apprenticeship," Bonnie said.

"In the early days customers always assumed I was 'the counter girl' but now people ask for me specifically."

While it might seem a world away from make-up college, Bonnie said being a butcher appealed to her creative side.

"I like the creativity that comes with the gig, it's a very precise job and you can take a lot of pride in your work," Bonnie said.

**"I combine my chef and butcher knowledge to understand why each part of meat is cut in a different way, depending on the muscle."**

Bonnie has broken through the stereotypes of the butcher trade with the help of the supportive environment provided by Lucas Meats.

"I wasn't sure if I would be able to do all the heavy lifting, but I soon realised there's so many different things you can explore and the knowledge behind the paddock-to-plate process is really interesting.

"I think women make great butchers because we have good attention to detail, which is crucial in this trade." ■

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### Bonnie's top red meat cuts

I love scotch fillet steak, the fat in the marbling is so tasty. I also can't go past slow-cooked meat such as chuck steak because it's economical, versatile and just falls apart in your mouth.



# butchers on your block?

## Growing up in the shop



Butcher Steve Rosevear believes providing cooking advice to his customers gives them confidence to cook red meat, so they come back for more.

### Steve's top red meat cuts



During winter, you can't beat a nice lamb shoulder in the slow cooker. In summer, a porterhouse steak on the barbeque is a fantastic choice.

### Steve Rosevear Steve's Fine Meats, Carlingford, NSW

Steve Rosevear literally grew up in his butcher shop.

He started working there 20 years ago when he was just 15. He worked his way up from the weekend 'wash-up kid' to an apprentice and eventually bought the business eight years ago.

He even met his future wife in the shop when they were teenagers, as her mother was a customer.

For Steve, the most rewarding moments are always when customers come back to say thanks for supplying the perfect cut of meat and giving them the correct cooking instructions.

"They learn to trust us, and we build

on that with our cooking advice and red meat knowledge.

### "It's about the whole experience, we're not just selling a piece of meat."

"Helping our customers with cooking advice makes them more confident cooking red meat, so they come back for more."

Looking back over the past 20 years, Steve has seen customer demands change.

"Customers don't do a weekly shop and keep a chest freezer full of meat at home anymore.

"They now decide on the day what they would like to eat, so we try and keep a mix of traditional red meat cuts as

well as value-added cuts. I love the challenge of coming up with new fresh ideas for my customers."

One thing that hasn't changed is the quality of red meat Steve serves up.

"Quality is a non-negotiable around here, we take great care in the beasts we select from producers because our reputation in our local community depends on it – it keeps our customers coming back for more.

"Thank you for the work producers do on-farm to ensure a quality red meat product, it really is the key to success for us." ■

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📖 Check out one of Steve's lamb recipes on page 47.

# Broadcasting the sustainable story

**E**dwina Clowes joined MLA in 2020 as the new Sustainability Frameworks and Stakeholder Manager, overseeing the management of the industry's beef and sheep sustainability frameworks.

Here, Edwina explains why sustainability is important to the red meat and livestock industry and why you might recognise her voice, as she kicked off her career as an ABC radio rural reporter.

**Q:**

## Tell us a bit about yourself

Agriculture and the livestock industry have always been in my blood. My dad's family were orchardists from Orangeville, NSW, and while his profession was medicine, his passion was always agriculture and the land.

We spent a lot of time at the family farm at Millthorpe, NSW, as it was a great escape from city life. When I finished my agricultural science degree, my natural progression was into the ABC as a rural reporter, working on well-known programs such as the NSW and Queensland Country Hour.

**Q:**

## How did you end up at MLA?

I'm passionate about rural Australia so, after my years with the ABC, I focused on agricultural leadership and stakeholder engagement. I've worked on initiatives such as the Australian Rural Women's Award and the Horizon undergraduate agricultural scholarship initiative.

I was keen to grow my understanding and learning of business and strategy so I embarked on a masters of business administration, which I've just completed. The Sustainability Frameworks and Stakeholders Manager position was a perfect fit, MLA has a good reputation as a science leader and enabling practice change, and the people are so committed to the red meat and livestock industry.



**Q:**

## Why is sustainability important to you?

I've seen how profoundly important sustainability is to producers. They have a vested interest in looking after their livestock and their land. Their businesses rely on it and leaving their farms in better shape for their children depend on it. I admire producers' real relationship with their land and their livestock.

Our customers and community are becoming increasingly interested in the importance of sustainability, a safe and reliable food supply and leaving our planet in a better place for future generations.

This is an exciting time to be involved in agriculture because the capability of science and technology are providing the opportunity for exciting new breakthroughs, teaching us to farm smarter, more efficiently and more sustainably.

I'm eager to use my (too many years to count) communication experience to tell the red meat and livestock industry's sustainability story to the wider community.

**Q:**

## When you're not at work where would we find you?

Aside from a bit of exercise I love nothing better than to spend time with my family and friends. My kids are both grown up now, but the fact they like coming home and being with the oldies is nothing short of amazing.

**Q:**

## What is your favourite red meat dish?

It's pretty hard to beat a good beef eye fillet, cooked medium rare with red wine jus and béarnaise sauce. ■

✉ Edwina Clowes  
E: eclowes@mla.com.au

🖥 Australian Beef Sustainability Framework: [sustainableaustralianbeef.com.au](https://sustainableaustralianbeef.com.au)  
Australian Sheep Sustainability Framework: [sheepsustainabilityframework.com.au](https://sheepsustainabilityframework.com.au)

Read the sustainability feature in the December 2020/January 2021 edition of *Feedback* at [mla.com.au/feedback](https://mla.com.au/feedback)

# Warm up as the days get cooler

Butcher Steve Rosevear of Steve's Fine Meats, Carlingford, NSW, has created the perfect lamb salad for autumn. Steve is one of the butchers involved in MLA's Greatest Butcher on Your Block campaign – see page 45. For more lamb recipes and cooking tips, visit [australianlamb.com.au](http://australianlamb.com.au)

## Warm lamb salad

By Steve Rosevear, Steve's Fine Meats

Serves: 4 • Preparation: 15 minutes • Cooking: 30 minutes

600g lean lamb rump steaks, fat trimmed  
 2 tbsp olive oil  
 1 red onion, cut into wedges  
 1 small cauliflower, cut into florets  
 350g kent pumpkin, peeled, cut into 4cm wedges  
 2 zucchini, thickly sliced  
 2 tbsp dukkah  
 2 tbsp tahini  
 2 tbsp water  
 Zest and juice of 2 small lemons + extra wedges, to serve  
 80g baby rocket  
 400g can lentils, rinsed, drained  
 80g feta cheese, crumbled  
 mint leaves, to serve

1. Preheat oven to 200°C (180°C fan-forced). Line two large baking trays with baking paper. Spread onion, cauliflower, pumpkin and zucchini in one layer onto trays. Drizzle with half the oil, season and toss to coat. Cook for 25 minutes or until vegetables are tender. Set aside to cool slightly.
2. Meanwhile, brush lamb with remaining oil, season and sprinkle with dukkah. Cook lamb in a non-stick frying pan over medium-high heat for 2–3 minutes each side or until cooked to your liking. Rest on a plate loosely covered with foil for five minutes. Thinly slice lamb.
3. In a screw-top jar combine tahini, lemon zest and juice and two tablespoons of water. Season with salt and pepper and shake well to combine.
4. Place baby rocket, vegetables, lentils and feta onto a serving platter. Toss gently to combine. Drizzle with tahini dressing. Top salad with lamb, sprinkle with mint and serve with lemon wedges.

## TIPS

- Leftover slow-cooked lamb leg or shoulder also works well in this recipe.
- Switch leg steaks for rump, fillet or backstrap.
- Rest the lamb after cooking to maximise tenderness and juiciness.



PRINCIPAL PARTNER

## Three items for your Beef Australia to-do list:

- ✓ Visit the MLA trade site
- ✓ Attend an MLA seminar
- ✓ Visit the Ken Coombe Tech Yards

### MLA seminars

**Mon 3 May**  
3.30pm – 5.00pm  
The fightback against dieback

**Tue 4 May**  
6.45am – 9.00am  
DNA to dollars  
breakfast forum

**Wed 5 May**  
8.00am – 9.30am  
Linking innovation with  
reproductive performance

**Thu 6 May**  
3.30pm – 5.30pm  
Driving value through  
supply chain innovation



To keep up to date with Beef Australia 2021 visit [mla.com.au/beef-australia-2021](https://mla.com.au/beef-australia-2021)