mla MEAT & LIVESTOCK AUSTRALIA
Your levies at work // May/June 2017

Feedback

Next generation

A note from the MD...

MLA exists to foster prosperity in the Australian red meat and livestock industry.

One part of the prosperity equation relates to growing demand for red meat. Our recent Global Markets Forum held in Melbourne and Brisbane gave attendees a whistle-stop tour of the challenges and opportunities in our major markets (see page 47). The bottom line is the outlook for Australian red meat is well positioned in the global marketplace, with rising middle class incomes and solid demand in existing and emerging markets, underpinned by our integrity systems and our superior reputation in the minds of consumers in key markets. However, we are far from resting on its laurels as we continue to face intensifying competition, market access hurdles, Australian supply constraints and lukewarm economic conditions in some markets.

On the market access front, the conclusion of the joint Australia-EU Free Trade Agreement scoping exercise was successfully concluded last month. This is a promising step towards Australia-EU FTA negotiations commencing later this year.

MLA's push to increase industry productivity is also an integral part of the prosperity equation with our investment in objective measurement technology (see pages 12–15) playing a key role.

Investing in our industry's current and future leaders is also critical to the long-term sustainability and prosperity of the industry and we've included a feature on pages 6–9 about how MLA is building industry capability.

In the lead up to the MLA AGM in Alice Springs this year, we're putting together a packed program featuring producer tours, a trade show and forums. I encourage you to consider attending on 21–22 November. Read more on page 3.

We've brought you another jam-packed edition of *Feedback* where you can read more about what MLA is doing to foster prosperity. I hope you enjoy it.

Richard Norton
MLA Managing Director

Contents

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Cover image: South Australian sheep producer Carly Bussenschutt, a Making More From Sheep participant (see page 24).

Alice Springs: Red Meat 2017

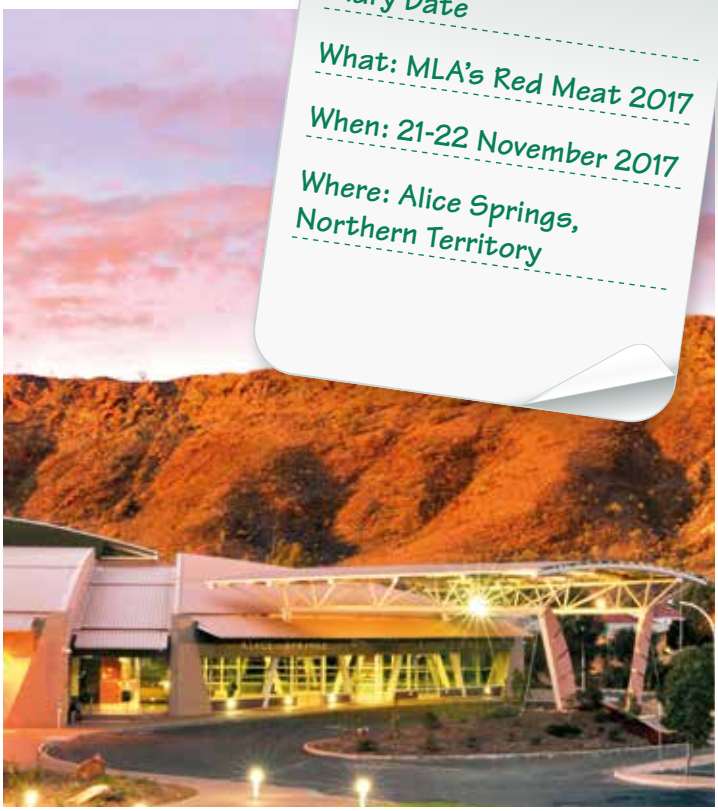
Alice Springs, Northern Territory, is a unique farming environment and this year will host MLA's Red Meat 2017 event consisting of a tradeshow, forums, a producer tour and MLA's Annual General Meeting on 21-22 November.

Diary Date

What: MLA's Red Meat 2017

When: 21-22 November 2017

Where: Alice Springs, Northern Territory



The forums and AGM promise to be an educational eye-opener with a program including farm tours, a business breakfast, an evening reception, a trade show and research and innovation updates. All red meat producers and the wider industry are welcome to attend.

Northern Territory Cattlemen's Association Executive Officer Tom Ryan said Alice Springs is not only home to extensive organic beef production, but has the flexibility to produce cattle for both the livestock export trade and southern domestic markets.

"For versatility, it's a hard region to top and its ability to finish stock is unrivalled in the NT," he said.

"Producers in the area are able to supply the Indonesian live export trade, the newer Vietnamese markets for heavier type cattle or supply the southern markets with quality Angus, Herefords and other British crosses."

Tom said the development of an abattoir at Darwin had delivered the region even more flexibility.

"Now Alice Springs producers can put together, say, four decks of live export cattle and two decks of domestic spec cattle for the abattoirs and send them all in one load."

Unique beef production

The Alice Springs region is home to the territory's earliest pastoral leases with 'Undoolya Station', managed by Ben and Nicole Hayes, among the original properties. Attendees at MLA's Red Meat 2017 will have the chance to tour the Hayes' property.

Owned by the Hayes family since 1906, its EU and organic-certified Poll Hereford herd was established in the 1930s and produces grassfed steers for the southern domestic trade and a smaller number of steers and heifers for EU-accredited feedlots.

They have also diversified into horticulture, namely table grapes and onions.

Nicole said most of the region's farm businesses are still family owned.

"Typically, most places are low-cost production systems with family providing the labour resource," she said.

"To make the most of what resources they do have, most of the family operations are highly innovative, embracing technology such as telemetry systems for checking water and walk-over-weighing systems to minimise extra stock movements and weight loss, and to capture animals as they meet market specs.

"We have of lot of certified organic beef businesses here due to our unique environment which has few parasites, minor phosphorus-deficiency issues and lends itself to low-cost production systems."

Look out for the event programs and speakers in upcoming editions of *Feedback* and at **http://agm.mla.com.au**

It will be held at the Alice Springs Convention Centre (pictured).

Selection committee applications open

The MLA Board Selection Committee has an important role in assessing the suitability of candidates for election to the MLA Board.

The committee is made up of two non-voting MLA directors, three representatives nominated by producer peak councils (Sheepmeat Council, Cattle Council and the Australian Lot Feeders' Association) and four producers directly elected by MLA members to represent the sheepmeat sector (one), grainfed (one) and grassfed (two) cattle industries.

At the 2017 MLA Annual General Meeting three producer representative positions (one in each producer category) are due for election.

Producer representatives on the Selection Committee are paid a sitting fee in accordance with MLA policy and expenses are covered for travel to attend meetings.

If you are an MLA member and want to nominate a person or yourself for election to the MLA Board Selection Committee at the 2017 MLA AGM, you need to complete a nomination form. Nominations close 22 September 2017.

To access a nomination form go to: **www.mla.com.au/selectioncommittee** or E: companysecretary@mla.com.au

Breathing easier

Finding diagnostic tools to efficiently and objectively identify Bovine Respiratory Disease (BRD) in Australian feedlot cattle is the focus of an ambitious new research project that could potentially transform the industry.

The project, Metabolomics of Bovine Respiratory Disease, is a grainfed levy project being managed by MLA in consultation with the Australian Lot Feeders' Association.

Led by Associate Professor Luciano González from The University of Sydney, Camden NSW, the project has three distinct objectives, which are:

1. to explore a possible diagnostic tool known as metabolomics
2. to determine for the first time, the economic impact of BRD on Australian feedlots, by a retrospective analysis of BRD treatment records and lung abnormalities at slaughter accounting for treatment cost, loss of production, labour cost and opportunity cost, amongst others
3. to research a method of automatic detection of fever, using a technology known as infrared thermography.

Like to know more about what is going on in the grainfed sector?
Subscribe to MLA's *Quarterly Feed* e-newsletter.
Contact **Joe McMeniman** // E: jmcmeniman@mla.com.au

Tune into sheep management

Making More From Sheep has developed nine new online webinars where industry experts share their knowledge on a range of topics, including:

- joining management
- joining Merino ewe lambs
- pre-joining ram inspections
- simplifying ram selection
- prioritising pasture expenditure
- reproductive problems
- summer worm management
- wool quality discounts
- benchmarking.

Each webinar goes for approximately one hour and all are available by clicking on the video list at **www.youtube.com/meatandlivestock**

Winter warmers

The next edition of MLA's *Entice* magazine is due out in late May. Packed with beef and lamb recipe inspiration for the cooler months, it will be available through selected butchers, IGA supermarkets and independent supermarkets.

You can also read it – and previous editions – online at www.beefandlamb.com.au search 'Entice'.

New online services tailored to you

mymla MEAT & LIVESTOCK AUSTRALIA

Available now at www.mla.com.au/mymla

myMLA
an online dashboard offering customised information and the latest MLA news

Single sign-on
one user name and password to access red meat industry systems

Market information
more valuable and interactive online market information and analysis

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Profitable Grazing Systems rolled out

MLA's Profitable Grazing Systems (PGS), a program which 'coaches' producers through making management changes, is to be rolled out following a successful pilot with 10 producer groups in 2016.

PGS supports producers to adopt skills and management practices, and achieve a 'measure, monitor and manage' approach to improve their business productivity and profitability.

The program uses a learning model based on small groups of producers working with a coach on locally relevant topics aligned to national priorities around productivity, sustainability and animal welfare.

PGS will initially run over five years at an industry investment of $8.4 million.

"PGS is targeting producers who are looking to take the next step in their business, make measureable change and invest in the future," MLA Program Manager - Adoption Renelle Jeffrey said.

Positive impact on producers

The pilot PGS project in 2016 involved 10 producer groups around Australia working with coaches from public and private agribusiness extension fields.

In an evaluation of the pilot, conducted midway through, producers were asked if they intended to do anything differently as a result of participating. Pilot evaluation found participating businesses benefited by an average of $30,000.

"In eight of the 10 groups, all participants indicated they had either 'made changes already' or that they 'intend to make changes'," Renelle said.

Changes from participants included:

→ "Implementing dung sampling and forage budgeting. Working on spelling paddocks, especially with early 'green break'. Better understanding of evaluating diet quality."

→ "Sown legumes, changing calving time to match feed demand/supply better and fertilise pastures after soil testing."

→ "Created a budget. Going to create a cash flow budget. Have a list of goals to work towards. Both members of the partnership are more on the same page as to where we are heading."

Profitable Grazing Systems
your pathway to success

Sign up

Producers wishing to get involved in PGS can contact MLA or, if they already have a local group with a coach, they can apply to MLA to ensure their program fits the national curriculum.

MLA will also be running workshops, webinars and regional events to build producer knowledge and skills and give them a taste of what can be achieved through PGS.

To find out more about PGS contact
Renelle Jeffrey
T: 0421 915 820
E: rjeffrey@mla.com.au.

To register your interest in the program contact
Julie Petty
T: 07 3620 5225
E: jpetty@mla.com.au

In-depth sheepmeat information

As the world's largest sheepmeat exporter and second largest producer, Australia stands to benefit from growing consumer demand in many developing countries where sheepmeat consumption is increasing, despite rising prices.

This is one of the insights from MLA's new report *Sheepmeat's unique global position*, released in April as part of a new series of in-depth reports analysing specific aspects of the global red meat industry.

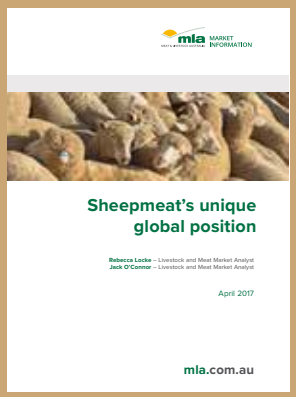
516,000
tonnes cwt lamb produced in Australia in 2016

Other key points include:

→ consumer perceptions and awareness, rather than purchasing power, affect sheepmeat consumption in developed countries

→ competition between markets for limited sheepmeat supply globally is likely to remain intense.

The report looks at influential markets that represent both developing and developed economies - China, the Middle East, the United States and Australia.



To read the full report go to: **www.mla.com.au/prices-markets**

Building capability

Building the foundations...

A bright future for the red meat industry depends on honing the skills and knowledge of the current generation, as well as developing the industry leaders of the future.

MLA invests in scholarships, mentoring and training programs to build industry capability among producers, research, development and adoption professionals and industry leaders.

The investment is targeted at two levels: farm level and the industry leadership level.

MLA Stakeholder Engagement Manager Sue Dillon said MLA's investment in capability building was driven by priorities outlined in *MLA's Strategic Plan 2016-2020*, which were determined by MLA and its stakeholders: producers, the Australian Government, commercial investors and research partners.

"There is a strong desire across industry to invest in capacity building and leadership skill development," Sue said.

Sue encouraged all interested members of the red meat and livestock industry to "put their hand up" for training and development opportunities.

"It is essential that we have a mix of ages, genders, production systems, climates and markets represented in these programs to get the best results for industry," she said.

In the paddock ...

"Farm-level programs build capability through skills, knowledge and confidence," MLA Program Manager - Adoption Renelle Jeffrey said.

"This includes programs such as BusinessEDGE and NutritionEDGE, the new Profitable Grazing Systems (see page 5), and workshops such as Bred Well Fed Well and Whole Farm Grazing Strategies.

"Participating in farm-level programs can also encourage producers to go on and complete macro-level training to develop their communication and leadership skills.

"MLA's regional consultation framework requires two-way communication between MLA and well-networked, practical, strategic leaders who can think critically and communicate clearly to drive successful research, development and adoption (RD&A) investment."

In the boardroom ...

At the macro level, MLA provides professional development opportunities for future leaders, supports RD&A professionals in their ongoing education, and helps producers develop communication skills so they can act as industry advocates.

"MLA sponsors red meat industry participants in the Nuffield Scholarship and Australian Rural Leadership program," MLA Community Engagement Manager Jax Baptista said.

"These scholarships are designed specifically to develop leadership skills, teamwork and critical thinking.

"We also host advocacy days and train producers in public speaking and social media use so they can act as spokespeople for the industry. We are then able to promote first-hand stories of on-farm best practice, told by authentic voices.

"These producers contribute to the industry's social licence and are powerful advocates for best practice within the industry."

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Jax Baptista
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Opportunities

Producers and livestock industry professionals interested in developing on-farm or industry leadership and research, development and adoption skills can take advantage of a range of opportunities supported by MLA:

Nuffield Scholarship - MLA funds one annual scholarship. **www.nuffield.com.au/scholarships/**

Australian Rural Leadership Program - MLA funds one 15-month scholarship each year. **www.rural-leaders.com.au**

Horizon Scholarship - MLA provides four $5,000 scholarships per year to undergraduate students. **www.rirdc.gov.au/research-programs/rural-people-issues/horizon-scholarship**

Australian Institute of Company Directors course - MLA supports beef producers each year in a joint program with the Cattle Council of Australia. **www.cattlecouncil.com.au**

Sheepmeat Industry Leadership Program - MLA supports a number of producers and industry professionals each year in a joint program with the Sheepmeat Council of Australia. **www.sheepmeatcouncil.com.au/SILprogram/**

Producer Innovation Fast-Track - MLA Donor Company (MDC) supports producers who are innovators, early adopters, AgTech entrepreneurs or future value chain leaders by providing expertise, co-funding and support. **www.mla.com.au/fasttrack**

A Leg Up - MLA funds a number of early career professionals in a mentoring program. **www.meridian-ag.com.au/the-library/alegupmentoringprogram/**

Future Livestock Consultants - MDC co-funds a project with consulting firms, allowing participants to undertake two-year internships. Ben Reeve E: breeve@meridian-ag.com.au. Turn to page 46 to read about two of the current Future Livestock Consultant participants.

Australian Intercollegiate Meat Judging Association (ICMJ) - MLA supports the ICMJ competition and associated training. **www.icmj.com.au/our-events/**

Industry workshops - MLA supports a range of targeted industry workshops, webinars and information days, including Bred Well Fed Well, EDGE workshops, MSA days, Pasture Updates and BeefUp days. **www.mla.com.au/events**

Direct action for beef leadership

The long-term productivity and profitability of the grassfed beef industry relies on the industry being represented by producers with strong corporate governance and leadership skills.

That's the view of Cattle Council of Australia which, together with MLA, provides funding for producers to complete the Australian Institute of Company Directors (AICD) course.

"The AICD course is a five-day program that focuses on areas of business management and professional development that are specific to cattle producers," Cattle Council CEO Duncan Bremner said.

"The course is ideal for beef producers wanting enhanced business skills or the confidence to step into director roles."

Last year, South Australia's Gillian Fennell (pictured) was one of 15 producers from around Australia to complete the course.

Feedback caught up with Gillian to chat about it.

What did you gain from the AICD course from a local point view?
At a local level, it has helped me be much more confident in encouraging good governance in the organisations I am involved in. I have found good governance, even in a local club or school council, can help a diverse group of people – some with very differing views – work together to achieve pretty amazing things.

What about from an industry point of view?
Without a doubt, the skills I gained will be of benefit to both me and the industry in the future. While my directorship 'career' is still very young (and so is my family), I am keen to get out there and make a contribution to our industry. I nominated for the board of Livestock SA last year and will definitely nominate again this year.

What current leadership positions do you hold?
Chair of the Remote & Isolated Children's Exercise, president of the Isolated Children's Parents' Association Marla-Oodnadatta branch and Australian Women in Agriculture South Australian representative.

What was one key lesson you learned about leadership?
Good leaders never stop learning.

Gillian Fennell
E: gillian@morestonecontracting.com

All aboard for Central Station

MLA supports the development of advocacy skills so producers can confidently share their stories of best practice on-farm management with the media and urban audiences.

The Central Station blog is one of the success stories from this advocacy focus.

Kimberley pastoralist Jane Sale created the blog in 2012, after attending an MLA-funded Influential Women workshop, designed to help producers better engage with the wider community.

"The 2011 live cattle trade ban to Indonesia highlighted a clear divide between the pastoral industry and the urban Australian community," Jane said.

"Central Station was about bridging that divide by showing people how different life is here, and what resourceful, caring people work in our industry."

Each week, Central Station has a different host from within the northern cattle industry; the host may be a station, family or industry employee based in Australia or Indonesia, who provides an 'authentic' voice for sharing the industry's stories.

From humble beginnings, and with support from a number of northern businesses, the website has managed to attract more than half a million hits. Its Facebook page has almost 50,000 likes and its Instagram page has more than 12,000 followers. In June 2016, ABC Books published a collection of Central Station blog posts in book form, and the first edition has already sold out.

Central Station was initially funded by Jane and managed by Stephanie Coombes on a shoestring budget.

In 2014, the pair successfully applied for sponsorship via MLA's biannual call for sponsorship requests. MLA has continued to sponsor Central Station each year.

www.centralstation.net.au
Find out more about MLA sponsorship: Go to **www.mla.com.au** and search "request MLA sponsorship"

Building capability

Gaining the global view

In 2014, Charters Towers beef producer Michael Lyons (pictured above) used an MLA-supported Nuffield Scholarship to study innovative ways of managing natural resources to create highly profitable grazing businesses.

Today, Michael chairs the North Queensland Beef Research Committee, which helps set the direction for beef research and assess projects for funding by MLA, and is a member of MLA's National Livestock Genetics Consortium Taskforce.

What did you gain from the Nuffield experience?
I was looking for ways of working with nature to produce 'more with less'. On the production side, I investigated selecting cattle that were adapted to their environment.

In our herd, we have cows that have been able to produce a calf every year for up to 13 years. This is an amazing feat in our northern environment; however, these cows are getting old and are unlikely to have many more calves. We are now using these cows with long calving histories, good breeding values and genomic information in an in vitro fertilisation (IVF) program to produce adapted, polled and fertile progeny.

This allows us to produce cattle that suit our environment and our business.

Travelling overseas and learning from progressive people broadened my knowledge and challenged my paradigms, and has resulted in a network of great people to 'bounce' ideas off. The experience also gave me the confidence to back my opinions and take up the invitation to join MLA's National Livestock Genetics Consortium Taskforce.

What was one key lesson about leadership from the Nuffield experience?
Leadership of others is about setting clear expectations, ensuring people have the relevant skills and experience, and then providing timely feedback. Great leaders do these three simple things well.

Michael Lyons
E: mmlyons@bigpond.com

Applications for the 2018 intake of Nuffield Scholars close on 16 June 2017. Go to **www.nuffield.com.au**

Getting 'A Leg Up'

Dan Korff wants to capture the wealth of knowledge held by the red meat industry's research, development and adoption (RD&A) professionals and share it with the next generation.

Dan (pictured right) is the creator of MLA's new program 'A Leg Up', which pairs new or aspiring red meat RD&A professionals with experienced mentors.

"The reduction in employment in traditional training grounds, such as government, has resulted in a gap in on-ground RD&A professionals supported by a broad team," he said.

"A Leg Up hopes to fill that gap by providing professional mentors who will act as both coach and advocate. The aim is to enable skills transfer to the next generation of RD&A specialists, and also encourage these valuable professionals to either enter or stay in the red meat industry."

A Leg Up was one of 18 RD&A projects endorsed to receive MLA funding for 2016–17, following extensive consultation with grassroots producers through MLA's regional consultation and annual call process (see pages 10–11).

The program's first group of 20 mentees and 20 mentors got together at the end of April. This will be followed by teleconferences and webinars. Read more on Dan on page 9.

Dan Korff
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www.meridian-ag.com.au

Increasing the sheepmeat leadership supply

The inaugural Sheepmeat Industry Leadership Program is underway, with 14 producers from around Australia taking part.

The program is part of the Sheepmeat Council of Australia (SCA) and MLA joint initiative, 'Building Leadership Capability for the Sheep Industry' and is run by the Australian Rural Leadership Foundation.

A second intake of 15 participants will occur in 2018. Each position is valued at $10,000.

SCA CEO Dr Kat Giles said the council is investing in the program to ensure the sheep industry "attracts, develops and retains people with leadership skills to contributed to the long-term viability of the industry."

Information about entry requirements for the program can be found online at **www.sheepmeatcouncil.com.au/SILprogram**

Feedback caught up with two participants in the inaugural program:

Dan Korff: Navigation and networking

An advisor with consultants Meridian Agriculture, based in Hay, NSW, Dan Korff previously managed a corporate-owned sheep business and now works with producers in the areas of livestock business management, genetics and succession planning. He is currently chair of the Future Farmers Network and project manages MLA's new 'A Leg Up' program (see page 8), which he created.

What attracted you to the Sheepmeat Industry Leadership Program?
I saw it as an opportunity to build and develop my own leadership skills, as well as an opportunity to explore other ways I could help the industry.

What has been of most value so far?
The first part of the course consisted of being dropped in The Grampians with five other people I'd never met, and having to camp and navigate our way to set checkpoints for three days. It was a valuable experience in terms of learning where my strengths are, how I communicate and interact with others, and how the other members of my group communicate and interact. We got to know each other pretty quickly.

What future industry roles are you interested in?
Our industry bodies, such as MLA and Australian Wool Innovation, are very important and I am keen to contribute to them, perhaps through the peak industry councils, in the future.

Dan Korff
E: dkorff@meridian-ag.com.au

Allison Harker: From banking to the bush

Allison Harker (pictured) returned to her family's farm at Yass, NSW, in 2009, following a career in investment banking that culminated in a nine-year stint in Hong Kong. Allison and her brother Landon Hodgkinson now work together running the Vale View Partnership mixed farming operation and Yass Valley Beef and Lamb export business.

What attracted you to the Sheepmeat Industry Leadership Program?
It offered the chance to gain a deeper understanding of how our industry works, how it is inter-connected and who the key players are. I want to give back to the industry and be involved in its future growth and development.

What has been of most value so far?
We did a workshop identifying the major issues confronting the sheepmeat industry and were then tasked with developing solutions for two of those issues, and presenting the solutions to the SCA board. We now have a group of really engaged people working together to solve real problems.

I'm also impressed with the diversity of people taking part. We have a vet specialising in animal nutrition, a sheepmeat specialist and a data analyst, sheep producers, someone from an animal pharmaceutical company and an agricultural consultant. There is a range of ages and people from around Australia. The sharing of knowledge is extremely beneficial.

What future industry roles are you interested in?
As both a Yass Valley local government councillor and a livestock producer, I'm interested in leadership roles in government and primary industry bodies. I want to help drive growth and economic development in agricultural businesses and their wider communities.

Alison Harker
E: allisonhodgkinson@hotmail.com

Prioritising research

Ground-up consultation

MLA is consulting with grassroot producers to inform its regional research priorities. Now in its second year, the regional consultation framework works to direct sheepmeat and grassfed beef levies in research, development and adoption that delivers on-farm outcomes.

The framework was developed following an independent review of MLA's levy investment process for on-farm research, development and adoption.

Three councils represent the interests of northern, southern and western grassfed cattle, sheep and lamb levy payers: Southern Australia Meat Research Council (SAMRC), Western Australian Livestock Research Council (WALRC) and North Australia Beef Research Council (NABRC).

One of main roles of the councils is to bring levy payers and co-investors together to review regional priorities against the national priorities.

Feeding into the three councils are committees help set the research and development agenda through identifying relevant priorities and also providing a platform for testing new concepts. They are also a central point to coordinate regular MLA communication activities, such as research and development updates, thus10providing a two-way feedback mechanism.

Via this ground-up approach, the priorities (see information page 11) are established and research organisations are invited to develop proposals for research and development to address these. A four-page expression of interest for research and development investment is initially submitted by individuals, organisations or project teams for scrutiny by MLA, regional producer chairs of SAMRC and NABRC, and WALRC producer members. These producer panels look at how the proposed work aligns with producer and industry needs. Technical experts and MLA managers examine the final selection of in-depth proposals to ensure they are technically sound.

"The process is rigorous because we have well-informed producers, technical experts and MLA managers providing direction to ensure we don't duplicate research," Jenny O'Sullivan said, South East Victoria and Tasmania Regional Committee Chair and current chair of the Red Meat Panel.

"This is important because the red meat industry has an enormous impact on both the national and global economies. Funding robust, targeted R&D will help keep the future of the Australian red meat industry efficient and profitable."

MLA General Manager Producer Consultation and Adoption Mick Crowley said the 2016–17 annual call attracted 148 proposals addressing the terms of reference that were developed from regional priorities.

"The proposals are extensively reviewed by producer panels, an expert panel and the red meat panel before projects are recommended for funding by MLA," he said.

Southern NSW livestock producer Angus Hobson (pictured) has been appointed chair of SAMRC and took over the role upon Ralph Shannon's retirement in April 2017. Angus is the sixth-generation owner and manager of a livestock enterprise in the Monaro region and has previously been the SAMRC Southern NSW Regional Chair.

Got an idea for a project?

Priorities for research and development initiatives are being established by NABRC, SAMRC and WALRC now. Lists will be submitted to the Red Meat Panel for review in mid-September, which will lead to a late September call for preliminary proposals for projects to address the priorities.

To have your say on an area you think needs addressing via research and development investment, contact the regional committee in your area.

Committee contact details are available at: **www.mla.com.au/about-mla/rd-consultation/**

Jenny O'Sullivan // E: osulliva@dcsi.net.au
Angus Hobson // E: gushobson@yahoo.com

Find out how you can have input into the consultation process: **www.mla.com.au/about-mla/rd-consultation**

Grassroots-directed priorities

Producer feedback via the regional consultation process identified the following 2017–18 national research and development priorities. MLA is now confirming the projects that best address these priorities. Details of the 18 projects funded to address the priorities identified in 2016–17 can be found at www.mla.com.au/about-mla/rd-consultation

1. Whole-farm breeder productivity systems:

- → reducing reproductive wastage
- → reducing impact of livestock disease carried by pest animals
- → developing whole-farm systems for managing breeder productivity
- → chemical castration
- → awareness and integration of cost-effective labour-saving technologies
- → developing pathways to efficient performance recording and benchmarking
- → more efficient and effective collection and use of data, both broadscale and crush-side, to reduce costs, inform decision making and improve productivity
- → technology to manage livestock while lowering infrastructure requirements
- → livestock management (such as self-herding, low-stress stock handling, cost-effective cattle weaning in paddock).

2. Profitable and efficient ruminant nutrition:

- → for Mediterranean-type farming systems – on-ground research into feed value of chaff carts and piles, including:
  - additives to improve nutritional value
  - economic analysis of chaff pile feed value for livestock and mixed-farming systems
- → optimising profitability through strategic supplementation:
  - additives to green feed to increase conversion rate of energy to liveweight gain
  - mineral/acidity effect on pastures (stock mineral deficiencies)
  - cheap, simple systems of mineral and vitamin supplementation
  - the effects of mineral nutrition and irrigated pastures
  - effectiveness of mineral and grain supplements in rangelands
  - what supplements aid metabolisable energy
  - non-protein nitrogen/urea versus true protein for lamb growth, carcase and eating quality and reproduction
- → rumen technologies to improve efficiency.

3. Future feedbase scenarios:

- → filling the feed gaps in Mediterranean-type systems
- → diversity in the feedbase
- → understanding and benchmarking profitability of current and future production systems
- → fodder/feed systems for climate zones to fill feed gaps and lift red meat production
- → pasture species resilient to climate variability giving longer vegetation growth for regions
- → innovative regional approaches to lift quality, quantity and utilisation of feedbase for increased production
- → research into sustainable development to support increased carrying capacity
- → optimising production from the feedbase.

Objective measurement

Finding the technologies which measure up

Two research projects are developing ways to reward red meat producers for the carcase traits of lean meat yield (LMY) and eating quality, while increasing efficiency in the processing sector. Both projects support MLA's plan to fast-track the rollout of objective carcase measurement in Australian red meat processing.

Objective carcase measurement is key to industry progressing to value-based trading, where people are paid for what they produce, rather than an average of higher and lesser-value carcases.

The first project is 'Advanced measurement technologies for globally competitive Australian meat' (ALMTech) which is funded by the Australian Government's Rural R&D for Profit program, as well as a 19-member partnership of processors, technology providers, universities, government departments and research and development corporations, including MLA.

MLA Sheep R&D Manager Richard Apps, who is managing ALMTech on behalf of MLA, said the project's first two research programs were focused on objective measurement technologies for LMY and eating quality (see below) because, "in simple terms, they are the key drivers of the value you can derive from a carcase."

The second research project MLA is involved in is the Sheep CRC's 'Quality based sheepmeat value chains' program. Establishing an objective measurement of eating quality is the focus.

"A key component of the Sheep CRC program is developing MSA cuts-based predictions for lamb," Richard said.

"The MSA quality guarantee could then be used to underpin higher-priced lamb brands, marketed to both domestic and export consumers.

Visual MSA grading is not an option in lamb because low levels of intramuscular fat (IMF) – which indicates eating quality – make it difficult to recognise visually.

What is ALMTech?

It's the 'Advanced measurement technologies for globally competitive Australian meat' project.

How does it work?

ALMTech has five research programs, each with its own goal. They are:

Program 1

GOAL: The development of lean meat yield objective measurement technologies for use on live animals and carcases.

HOW: Large-scale testing of beef DEXA (dual energy X-ray absorptiometry) technology has shown good levels of precision for determining lean meat, bone and fat yield in a carcase, paving the way for commercial adoption.

Project leader Associate Professor Graham Gardner, from Murdoch University, said the trials late last year also showed processing factors, like spray chilling or carcase orientation during scanning, have little impact on measurements.

"This is important for any technology to be adopted broadly – it needs to work under commercial conditions," Graham said.

MILESTONE: The results mean DEXA is now ready for industry rollout. The first commercial installation in lamb is occurring at JBS Bordertown, and the first in beef is at Teys' Rockhampton plant later this year. These installations are co-funded by the processor, MLA, Australian Meat Processor Corporation (AMPC) and MLA Donor Company.

Graham said a proposal initiated by MLA and AUS-MEAT and supported by AMPC is being progressed to build a mobile CT scanner for calibrating DEXA and other lean meat yield (LMY) measurement devices around Australia, which would be important as the technology became more widely adopted.

Program 2

GOAL: The development of eating quality objective measurement technology.

HOW: ALMTech's eating quality research is progressing, with team co-leader Professor David Pethick and MLA's Sheep R&D Manager Richard Apps recently meeting with New Zealand AgResearch to discuss opportunities for collaboration.

"New Zealand researchers are heavily focused on hyperspectral imaging technologies to measure intramuscular fat," David said.

"This has excellent synergies with our own work and, the more processors using such technology, the better the business case for a company to make it."

MILESTONE: Preliminary results are also in from Meat Image Japan camera trials, which showed the technology could improve the accuracy of marbling prediction across the Australian beef industry, reducing the impact of human graders.

"To succeed in developing cuts-based MSA for lamb, the Sheep CRC team needs the eating quality measurement technology being developed by the ALMTech project," Richard said.

A key contributor to both research programs has been the Sheep CRC Lamb Supply Chain Group, which includes representatives from processors, MLA, state departments, Australian Meat Processor Corporation, Sheep CRC and Murdoch University.

"It's critical for research adoption that we engage with the processing industry to understand their needs and help them understand the value these technologies can bring to their businesses," Richard said.

"The more value we can create for processors, the more value available throughout the entire supply chain.

"Having processors directly involved ensures technology isn't just developed, but implemented, as has been shown by the adoption of DEXA in lamb processing."

Coming up...

What 'blue sky' technology is ALMTech investigating?

Fibre optic probe – ALMTech researchers are collaborating with imaging engineers to investigate using a fibre optic probe to measure intramuscular fat (IMF) in hot or cold carcases.

IMF predicts eating quality, so determining IMF before getting to the cutting stage would allow carcases to be allocated to different boning runs for different client end points, increasing processing efficiency and optimising carcase value.

MEXA – DEXA, or dual energy X-ray absorptiometry, is now being used to measure carcase composition in the Australian lamb processing industry and rolling out in the beef industry this year.

The next iteration of X-ray technology will be MEXA – multiple energy X-ray absorptiometry. Just like DEXA, MEXA will provide carcase yield estimates, but at an even higher level of accuracy. ALMTech researchers expect to trial MEXA technology this year.

Existing technologies, new applications – 3D imaging, hyperspectral imaging and near-infrared reflectance spectroscopy (NIRS) are all technologies that exist today. Now work is underway to see if 3D imaging can measure LMY in live animals for use in feedlots or the seedstock sector.

Turn to pages 14–15 to find out how industry will benefit from this research.

Program 3

GOAL: The development of robotic technology for beef processing automation.

HOW: Airline baggage CT systems are among the technologies being evaluated.

"This X-ray based system has potential to work in processing plants, particularly on 3D carcase modelling for precise robotic cutting lines, and 3D offal inspection," said program leader and MLA Supply Chain Technology Program Manager Christian Ruberg.

"We hope objective measurement of offal, or other carcase downgrading or condemnation factors, could reduce carcase downgrade incidents, as well as provide better feedback to producers to encourage carcase health compliance.

"In terms of offal inspection, we're aiming to increase on-farm productivity by providing advanced sensing and improved information on livestock-related health feedback."

Program 4

GOAL: The data capture from new measurement devices for use in genetic and producer feedback databases.

HOW: This deals with harnessing data produced by the new measurement technologies and sharing it up and down the value chain.

Led by Dr Daniel Brown from the University of New England and NSW Department of Primary Industries Animal Genetics and Breeding Unit, this program is focused on genetic evaluation and producer feedback.

"There are a range of exciting opportunities stemming from these new measurement technologies, one example being the potential to develop genetic tools for controlling the distribution of bone, muscle and fat in different regions of the carcase," Graham Gardner said.

"This stems from the capacity of DEXA technology to determine composition in the forequarter saddle and hindquarter sections of the carcase."

Program 5

GOAL: The development of data decision systems for carcase sorting, retail inventory management or value-based marketing using data captured by new measurement devices.

HOW: Led by Professor Wayne Pitchford from the University of Adelaide, this program is focused on supply chain engagement and developing new tools for precision management of livestock and carcases in abattoirs.

These will make use of data stemming from the new measurement technologies, enhancing the supply chain's capacity to capture the profit margins available.

Research in Programs 3, 4 and 5 is ongoing and milestones will be ready for reporting later this year.

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Objective measurement

Looking to a measurement-driven future

The multi-focused ALMTech research project aims to deliver benefits across the red meat value chain. *Feedback* spoke to a processor and a producer about what they are seeking from the project, and how they plan to incorporate outputs from the research into their businesses.

Australian Country Choice (ACC) is one of the world's largest vertically integrated beef production and processing operations and an enthusiastic collaborator in the MLA-led ALMTech project.

ACC Managing Director David Foote said ACC actively pursues opportunities to participate and invest in R&D that can increase productivity, as well as its capacity to "measure and manage".

"ALMTech's objective measurement of lean meat yield (LMY) and eating quality research clearly meets that criteria," David said.

"With ACC being vertically integrated, these carcase attributes can be translated back to the baseline genetic development programs within our herds to achieve the commercial and consumer outcomes we require.

"We already use an extensive suite of information and feedback systems – both proprietary and in-house – from breeding through backgrounding, feedlotting and primary processing.

"Any new data collection points will be rolled into these systems and the new carcase measurements will enhance the completeness of attribute or trait measurements across our integrated model."

David said ACC is using a range of new technologies, and working with researchers to develop others, across its three divisions including:

- **Property:** embracing spatial mapping technologies to improve pasture utilisation, implementing a bull breeding project utilising IVF technologies, investigating the use of drones to enhance remote sensing opportunities and working with university researchers on cattle pain relief programs
- **Feedlot:** working on technologies for predictive performance, dag management and opportunities for increased use of solar technologies to reduce energy costs
- **Processing:** identifying technologies to improve waste stream management, achieve cost savings in energy and water utilisation, and further investigate technologies for yield mapping and boning room measurements.

In the paddock

Western Victorian sheep and cattle producer, Michael Craig (pictured) is a member of the ALMTech steering committee.

"Like all producers, I want to be rewarded for my efforts," Michael said.

"Objective carcase measurement will give transparency regarding what the real value of our product is to both the processor, who needs processing efficiency, and importantly to the consumer, in terms of eating quality and portion size."

Michael said new measurement technology will provide "higher quality feedback" to his business.

"We already use electronic identification tags in our business, so objective measurement and carcase feedback systems will allow us to link every animal's performance at the processor back to our on-farm level in terms of genetics, feed sources used and the management decisions we have made," he said.

"MLA programs such as Livestock Data Link are already starting to do this, but objective measurement will provide higher quality feedback.

"The key will be ensuring the data flow is seamless and can drive decision making without busy producers having to find time to do all the technical things we are not well versed in."

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Big benefit from adoption

An independent report has found a $420 million/year potential benefit to the red meat industry from the full adoption of objective measurement technology.

However, the report also found that unless the rollout of the technology is fast-tracked, only $72 million/year of benefit is likely to be realised by 2020.

The year-long examination by consultants Greenleaf, Miracle Dog Consulting and S Williams Consulting was commissioned by MLA. It found the majority of benefit would come from measuring lean meat yield (65% of the $420 million) and it would be shared between processors and producers.

To read the full report go to **www.mla.com.au** and search 'OM value proposition'.

The Australian Meat Processor Corporation and Australian Meat Industry Council are currently conducting an independent review of objective measurement technology.

Industry support for OCM plan

Industry has endorsed MLA's proposal to accelerate objective carcase measurement (OCM) in the red meat sector via the rollout of DEXA technology. Here's a selection of statements from stakeholders on the need for OCM.

David Hill, Cattle Council of Australia Queensland councillor: "We need to maximise the value of our product.

"For northern producers, lifting eating quality to the same level as southern production systems can be a challenge, but maximising yield through management and genetics is definitely achievable.

"Current yield measures have a lower than acceptable level of accuracy, so we need objective measurement – at this stage, that's DEXA – to inform and drive those key on-farm management decisions."

Kat Giles, Sheepmeat Council of Australia CEO: "OCM, coupled with eating quality measurement, has the potential to increase saleable meat yield and maintain or improve eating quality to underpin improvements in quality and compliance across the entire sheepmeat value chain.

"The ability to enable scientific measurement of saleable meat yield and eating quality will provide greater feedback across the sheepmeat value chain, giving producers more objective data that will allow for improvements in productivity on-farm."

Daryl Quinlivan, Federal Agriculture Department Secretary: "The concept of OCM and the supply of those measurements back to producers to help them make better decisions has the capacity to improve the red meat industry's productivity and it will also help to build greater trust in the industry.

"From a public benefit point of view, we'd like to see this technology implemented in a way that's consistent and on a common platform so we don't have competing technologies and arguments about the relative merits of different ways of assessing carcases, and producers have confidence about what's being done with the information about their production."

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First machine rolling out

The first commercial beef DEXA machine will begin operating in Teys Australia's Rockhampton plant by late July.

Teys Corporate and Industry Affairs Manager Dr John Langbridge said the company was expecting a number of benefits to flow from the adoption of DEXA technology.

"DEXA will give us a better guide to carcase composition, particularly regarding lean meat yield (LMY), which will allow us to give better feedback to producers and, ultimately, reward them for producing high-yielding animals," John said.

"We find that within a mob of cattle, there can a large difference between the best-yielding and worst-yielding animals.

"That individual carcase difference in LMY is not accurately reflected in our current feedback to farmers, which are hot dressed carcase weight and P8 fat depth. Currently, producers are effectively paid on the average performance of the mob.

"DEXA will provide a more accurate assessment of the higher-yielding animals which should assist the producer in making better decisions back on farm around animal selection and husbandry.

"If we can help producers recognise and then produce more of the top-yielding animals, we all benefit."

John said Teys' long-term aim was to work with producers to create a value-based payment system that would highlight those higher yielding animals and encourage further on-farm improvements.

"We firmly believe it is possible to increase the value of the individual animals to the mutual benefit of both producer and processor," he said.

According to John, DEXA also offers potential to automate some boning processes.

"By increasing the accuracy and uniformity of cutting lines, we will be able to maximise valuable cuts from a carcase, and create a more consistent product for customers," he said.

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Feedbase

The latest on-farm strategies emerging from MLA's investment in research, development and adoption.

In this issue

Look out for new leucaena

While many northern beef producers have introduced leucaena as a long-term productive feedbase option, its susceptibility to attack by the leucaena psyllid has limited adoption in humid, high-rainfall coastal areas.

This is set to change with the arrival of Redlands, a new psyllid-resistant variety developed by the University of Queensland with MLA funding.

Seed build-up and trials of Redlands are underway and the seed is expected to be commercially available in 2018 (climatic conditions permitting).

Feedback spoke to producers who are helping build up seed for the new variety.

Case study: The inland experience

Peter Larsen has been growing leucaena at 'Cedars Park', Banana, central Queensland, for 32 years. He credits leucaena with helping him move away from relying on costly forage crops.

Grazing established stands of leucaena, Peter's steers gain around 300kg a year and it has allowed him to reduce the need to renovate other pastures or grow costly forage crops.

Peter has hosted many producer training days with the University of Queensland to support the adoption of leucaena-based pastures. The family business, Leucseeds, also holds the plant breeder rights for the Tarramba, Wondergraze and Redlands varieties of leucaena.

"We planted Redlands for seed production in March 2016 and the plants are now 1.8 to 2.4m tall. We don't have seeds as yet, because of a drier than expected season," he said.

"We normally harvest leucaena seed in August and February but, at this point, we don't know how much commercial seed will be available for release (from Leucseeds)."

Peter (pictured with his son Tim) first planted leucaena in August 1985 with a mix of buffel and green panic and, although those original plantings have run-down over the past few years, he said it still responded well to phosphorus, sulphur and zinc applications.

"I find that the cattle don't touch the leucaena when the spring flush is on, but once the grass hays off, they get into it," Peter said.

"I don't have to supplementary feed because the leucaena takes over in the dryer months and this means I often have fat cattle to sell when everyone else is feeding to maintain the status quo."

Snapshot

Peter and Jan Larsen and Tim and Rhyll Larsen, 'Cedars Park', Banana, Queensland

Property: 2,023ha

Enterprise: Beef and leucaena seed production

Livestock: Brahman cattle

Pasture: Leucaena with buffel and green panic

Soil: Brigalow belah softwood scrub with areas of ironbark forest and open black soil country

Rainfall: 660mm

Tips for establishing leucaena

The Leucaena Network Executive Officer Michael Burgis has these tips for establishing a productive leucaena crop:

- **Prepare:** Plan at least one year ahead to enable strips to be prepared through cultivation and spraying. The industry recommendation is to plough 4–5m wide strips to enable mechanical and spray control of the weeds in the all-important 9–12 months of leucaena establishment.
- **Soil test:** Leucaena requires phosphorus levels of 15–25ppm and sulphur should be applied if levels are low or unknown. Monitor the soil nutrition in subsequent years.
- **Site selection:** Plant leucaena on your best, preferably well-drained, soils. A good seed bed with fine soil for optimum seed/soil contact will ensure a better rate of germination.
- **Density:** Aim to establish 8–12 plants/metre of the seed row. All seed must be accompanied with inoculum. Ideally, inoculum should be applied in a water solution into the seed trench at the time of planting.
- **Pest control:** Check paddocks for scarabs, earwigs, wireworm beetle and wingless cockroaches – they all chew leucaena seed.
- **Timing:** Plant when there is a full moisture profile of 60cm of moist soil between 6–10m row spacing in either a single or double row configuration. A seed depth of around 3cm is ideal; be careful not to plant too deep.
- **Control competitors:** At planting or after planting, spray the rows with Spinnaker® to control broadleaf weeds and use Verdict® to control grasses. The plants are delicate in the emergence stage and susceptible to weed competition and insect attack, so get as close as possible with machinery to keep the environment weed-free. Keep the rows free of competition until the plants are 1.8–2.4m high. It needs to be the dominant plant in the paddock.
- **Companions:** If you are planting into a clean paddock, don't plant companion grasses until the leucaena stands are 12 months old. Any grasses will thrive alongside the legume.

Leucaena growers, and producers intending to establish leucaena on their properties, should adopt the Best Management Code of Practice, available on The Leucaena Network website.

Feedbase

Timeline for establishing leucaena

December - plant crop

First winter - graze weaners

First spring - lock up

Second December - plant grasses

Second winter - graze any livestock

Second spring - established

Case study: Reward for effort

Bruce Mayne and his son-in-law Nathan Evans have been growing the new psyllid-resistant Redlands variety of leucaena on 'Bandana Station', Rolleston, for a couple of years. More recently they have planted it at Bruce's new property 'Fairview' at Calliope in an effort to establish a seed-producing crop.

Leucaena has delivered Bruce a protein content equivalent to lucerne, the ability to carry one beast/2ha and annual weight gains of 250kg/head.

"It has made a tremendous difference to our output, especially in the forest country where it has transformed speargrass flats that were only considered breeding country into high-class fattening pastures.

Bruce said taking part in the development of a psyllid-resistant variety that thrived in humid, northern coastal areas was exciting, despite a less-than-perfect start to the trial.

"Unfortunately, the season was against us and we had a disappointing harvest at Bandana this year. We hand-harvested a small amount of seed and it is currently being graded," he said.

Bruce said leucaena thrived with little or no fertiliser in the well-drained, deep soils on the flats at Bandana Station because of the high phosphorus content in the soil. On the other hand, Fairview has quite low phosphorus, but Bruce is hoping the reliable rainfall in the area will make up for the substantial fertiliser inputs.

"Presently, steers at Bandana are fattened off the leucaena with the leads going to market in June-July at 20 months of age and dressing at 280-300kg.

"The tail-enders are held over for another summer and dress at 350-400kg.

Employee Malin Funda harvesting seed earlier this year.

At Fairview, we run brought-in Brahman-cross heifers to be sold onto feedlots when they reach 350-400kg liveweight."

With 35ha of irrigated area planted and another 25ha ready to go, the family is poised to move to larger-scale mechanical harvesting of Redlands seed to sell to fellow producers. Bruce said they were on track to harvest seed from the new plots at Fairview and the existing plots at Bandana in March 2018.

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MLA website: **www.mla.com.au** and search 'leucaena planting tips'

For technical and practical leucaena establishment support:

The Leucaena Network
www.leucaena.net

Snapshot

Bruce and Lucinda Mayne and Nathan and Olivia Evans, 'Bandana Station', Rolleston; 'Fairview', Calliope

Property:
'Bandana' 17,000ha; 'Fairview' 1,700ha

Enterprise:
Bandana: breeding and finishing property for organic and EU markets in the Carnarvon Ranges with 800ha of established leucaena (Cunningham variety);

Fairview: backgrounding for feedlots with 800ha of Redlands leucaena established.

Livestock:
Bandana: 2,500 Angus, Charolais and Brahman crosses; Fairview Brahman cross heifers.

Pasture:
Natural forest country and large areas of leucaena

Soils:
'Bandana': well-drained, deep soils with high phosphorus content. 'Fairvew': river flats with mainly low phosphorus soils

Rainfall:
850mm

Genetics

Breeding for resilience: the next genetic frontier

Two recent MLA-funded projects have focused on identifying cattle and sheep that can better handle environmental challenges, and remain productive and healthy.

The projects, undertaken by CSIRO, investigated resilience traits in cattle and sheep and examined whether selection for such traits is possible.

Researcher Dr Brad Hine (pictured) said the projects looked at several measures of resilience, including immune competence (the strength of the animal's immune system), temperament and the ability to cope with management-induced stress.

The research team, led by Dr Ian Colditz and Dr Aaron Ingham, worked with Angus Australia to test resilience traits such as immune competence, stress response, temperament and associations with health and productivity in 1,149 performance-recorded Angus calves.

The calves were mainly from the Angus Sire Benchmarking Project, another MLA co-funded project, and they were tracked from yard weaning to finishing at Rangers Valley Feedlot at Glen Innes, NSW.

The results showed that immune competence traits were moderately heritable and selecting for them had significant benefits.

"These traits are important to measure as we know that if we can improve the resilience of animals, they will be more productive and better able to cope with challenges," Brad said.

The number of mortalities during feedlot finishing was significantly higher in low immune competence animals than high immune competence animals.

Data was collected at the feedlot on the cost of health treatments, lost production days as a result of health-related mortalities and the replacement cost of animals that had died.

Resilient livestock: What are the benefits?

Resilience is an animal's ability to cope with challenges in their production environment and to quickly bounce back to being productive. CSIRO researcher Dr Brad Hine said resilient livestock:

- → are more productive
- → are easier to manage
- → incur fewer health costs
- → have reduced mortality
- → help maintain a positive image for the industry by supporting social licence.

The combined health-associated costs were calculated at $103.36/head for the low immune competence animals and $3.53/head for the high immune competence animals.

"The low immune competence animals represented only about 12% of the animals tested but they contributed about 35% of total health costs. Being able to prevent these less-resilient animals entering the feedlot would have significant economic benefits," Brad said.

Sheep work

The project also investigated the resilience traits in more than 3,000 lambs and ewes from the MLA Resource Flock and Sheep CRC Follower Ewe flocks, based at Armidale in NSW and Katanning in Western Australia.

The results suggested significant economic benefits in selecting for immune competence in sheep due to favourable associations with internal parasite resistance, a range of production traits and several carcase characteristic traits. There was also a positive correlation between immune competence and some wool traits, including staple strength.

What's next?

Further research aims to simplify resilience testing methods, with the long-term aim of developing a resilience selection index tailored for different cattle and sheep production systems. These indexes would allow producers to target improved resilience when making selection decisions.

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Feedbase

Prevention is better than cure

Early intervention in a pasture's life will reap more productivity long-term and could potentially extend pasture production by at least five years, according to Dr Kevin Smith from the University of Melbourne.

"Persistence should mean more than pasture survival – the aim is a robust pasture that is performing at, or near, peak production," Kevin said.

He said the best perennial pasture management plans were those that took producer needs and local conditions into account.

The MLA-funded Producer Research Sites (PRS) program, along with the South West Prime Lamb Group (SWPLG), the University of Melbourne and Agriculture Victoria, has trialled a flexible approach to pasture management to help lift perennial ryegrass persistence and reduce the need for re-sowing.

"Theoretical plant management recommendations don't always fit with a producer's on-farm animal husbandry needs," Kevin said.

"A more flexible approach means producers can think about their overall system to see what fits best and do some economic modelling before embarking on pasture renovation/ maintenance."

The trial focused on developing techniques to extend the peak production period. These included grazing and recruitment of ryegrass seedlings and silver grass herbicide interventions on two separate PRS sites, and barley grass herbicide interventions on producer Kate Joseph's property at Tyrendarra (see page 21).

Establishing seedlings

The ryegrass seedlings trial used mesh to knock down seed. The mesh was dragged across seeding ryegrass pastures behind a motorbike. The concept was to reduce traditional lockup periods in late spring from about four months to eight weeks, and then spell the area after the autumn break for three to six weeks, resulting in a more robust ryegrass pasture.

"Some systems will have enough grass in late spring to allow a ryegrass paddock to be locked up and a recruitment strategy to be used," Kevin said.

"If 1,000kg/ha of viable seed hits the ground and only 3% survives, this equates to 30kg/ha of seed. It's important that the pastures are clean of weeds so they don't also set seed."

Kevin advised producers to ask the following questions before beginning seedling recruitment and grazing strategies:

1. If locking up a paddock, how long can it be spared in any season?
2. When is flowering time so the paddock can be locked up to produce viable seed?
3. Is it economically viable to lock up and supplement livestock?
4. How will seedy pastures be managed, especially for sheep production?

Herbicides help

Victorian MLA PRS Coordinator Lisa Miller said the results from herbicide interventions for silver grass and barley grass were exciting.

These competitive annual weeds were showing up as factors that weakened ryegrass pastures, and two years of consecutive control were needed to get rid of them and achieve peak production.

"We were surprised at how ryegrass pastures in obvious decline could become vigorous and like new pastures after the removal of weeds. Herbicides have proven to be a low-cost and effective means of maintaining high-quality ryegrass pasture for longer," she said.

"This new research helps build an understanding of why pastures may not persist and provides tools producers can use to increase the life of their pastures but still keep them productive.

"Early intervention and renovation, as well as maintaining persistent pastures at peak production, contribute to greater profits."

Pasture persistence strategies

- → allow ryegrass to reseed naturally
- → increase the percentage of perennials in your pasture
- → identify nutritional deficiencies in soil
- → graze strategically
- → before spraying weeds, consider time and input costs versus pasture gains
- → assess paddocks – it may be more cost effective to renovate seriously rundown pastures
- → take seasonal conditions into account – herbicides that kill silver grass and barley grass will suppress growth rates of ryegrass.

Pastures to push production

After gaining more than twice the number of heavyweight lambs off improved perennial pastures, Victorian producer and South West Prime Lamb Group member Kate Joseph has no doubt that pasture rundown affects the growth rate of lambs.

"I run a high stocking rate so I prioritise better pastures for higher-performing sheep and ewe lambs," she said.

"One of the techniques the PRS project has given me is the ability to know how to improve my pastures and prioritise my feed to stock needs."

Kate said locking up paddocks to allow ryegrass to set seed was not suitable in her operation, so pastures were improved annually and barley grass-infested pastures were managed to avoid stock health issues (like seed infestations) in spring.

"We have found we get the best results for barley grass control if we spray affected paddocks with 200ml/ha of Shogun® following germination and seedling establishment, which – depending on the season – is usually late autumn," she said.

"One year of management definitely decreased the amount of barley grass and increased the percentage of perennial ryegrass in the pasture, but two consecutive years of treatment was more effective in barley grass control. Using Shogun® is cost-effective, as it works out at approximately $9/ha.

"However, you must have ryegrass already in the paddock before using Shogun® and strategically treat only a portion of affected pastures annually, or you will end up with a feed deficit and even worse weed problems in the open spaces created by the removal of the barley grass seedlings.

"Smaller properties like ours present their own problems – there is less flexibility for livestock movement and improvements will only happen if we get an early autumn break and have the time to establish new pastures before lambing begins.

"Our main priority is managing the pastures we have already improved and slowly improving another paddock as often as we can."

Snapshot

Kate Joseph, Tyrendarra, south-west Victoria

Property: 140ha

Enterprise: Prime lamb production

Livestock: Border Leicester x Merino ewes and Poll Dorset rams

Pasture: Perennial ryegrass and sub-clover

Soils: Sandy loam

Rainfall: 750mm

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Animal health

Sheep and calf scours cost the livestock industry through lost production and potential contamination risk along the supply chain. New MLA-funded research is investigating improved testing and identification to reduce these impacts.

New calf scours test improves accuracy

An innovative new test for calf scours, which can identify the multiple pathogens causing the disease in a single step, is now available.

Researcher Dr Alison Gunn from Sydney University said neonatal calf scour outbreaks generally involved multiple pathogens. The top five are rotavirus, coronavirus, Cryptosporidium, Salmonella and *E. coli* K99.

"If producers have a significant calf scours problem, there is generally more than one pathogen involved and while several new vaccines can assist in control, calf scours continues to be a difficult problem to manage on farm," Alison said.

Funded by MLA, the team of researchers from Sydney University and the NSW Department of Primary Industries have developed a more accurate and rapid diagnostic test that can identify most of the pathogens responsible for scours in a single step.

The test can also be used to detect where the sources of infection are found on farm, but more work is required to refine the application and interpretation of this environmental testing.

Alison said producers would eventually be able to take samples at various locations on their farm and confirm which pathogens exist and where the reservoirs of infections are; for example, near water troughs or in the calving paddock.

"Producers can then identify the areas of greatest risk, take appropriate advice on targeted treatment options and look at the cost-benefit of different management strategies, including vaccines," she said.

"It is important to emphasise that vaccines are not a panacea for calf scours, but an adjunct to good management.

"Producers experiencing outbreaks of scours with clinically sick or dying calves should always test for all likely pathogens to get a complete picture of the disease problem on the property and enable specific treatment and control options."

Further research will investigate practical on-farm sampling strategies and develop improved management recommendations for producers.

Calf scours outbreaks:

- → cost Australia's beef industry $23 million each year in lost production and management
- → were ranked number seven in the priority list of endemic diseases for the southern beef industry
- → affect calves between one and six weeks of age and can cause losses of up to 20% of calves in severe outbreaks
- → are caused by a complex interaction between different pathogens and the calves' environment and immune status.

The test is now available through veterinarians.

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Shining light on sheep scours

A new test has been developed to improve the understanding of infections that cause scouring and reduced productivity in sheep. While intestinal parasites cost the Australian sheep industry an estimated $436 million a year, little is known about the impact of other parasites and bacteria on the health and production of prime lambs, often via scouring.

The project, funded by MLA and Australian Wool Innovation, developed a test to measure the concentration of pathogens that may cause sheep scouring, including Salmonella, Campylobacter, Yersinia, Chlamydia, Eimeria, Cryptosporidium and Giardia.

Researchers Caroline Jacobson (pictured) and Una Ryan from Murdoch University, WA, said the test could also be used to detect the presence of some worm species.

"The test offers advantages on current methods because it is fast and accurate and can identify the type and size of infections using manure samples," Caroline said.

The test was trialled on 3,412 manure samples collected from prime lamb flocks across WA, NSW, SA and Victoria.

Caroline said the new test revealed distinct differences in the types and size of infections detected between farms and at different sampling times between weaning and slaughter. Salmonella prevalence was generally detected at low levels across the farms while Campylobacter was more common. Cryptosporidium and Giardia were common on all farms in the study.

"Cryptosporidium and Giardia are microscopic parasites and the impact of them on sheep production has not been well studied prior to this project," she said.

Across the flocks included in the study, Cryptosporidium was associated with a lower liveweight, carcase weight and dressing percentage, while Giardia was associated with lower carcase weight, and some Yersinia species were associated with lower liveweight.

"Interestingly, these effects were observed in normal healthy flocks with no obvious signs of disease that would trigger a producer to seek veterinary help. This suggests these infections could be causing a hidden loss of production in prime lamb flocks," Caroline said.

Further work is required to better understand the production consequences of these infections, how these diseases are transmitted between sheep, and under what circumstances sheep health, welfare or productivity is likely to be affected.

Key management strategies for reducing the impact of sheep scours:

- as the overwhelming cause of scours is worm infestation, maintain good parasite management
- understand other causes of scouring, including bacterial and other infections, plant toxicities and some mineral imbalances
- manage pastures to provide 'clean' paddocks for worm-susceptible classes of sheep
- utilise professional advice and resources such as the MLA-supported Paraboss program. **www.paraboss.com.au**

Laboratories can now follow this testing regime, but producers need to consult their veterinarian to address sheep scour issues.

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Building capability

Business benefits continue

As MLA strengthens its offering in producer adoption programs through the new Profitable Grazing Systems program (see page 5), we reflect on the benefits of participation in the successful Making More From Sheep (MMFS) and More Beef from Pastures (MBfP) programs. Here we talk to two producers about the immediate and longer-term benefit to their businesses as a result of participation.

Producer: Carly Bussenschutt, Kangaroo Island, SA

Program: Making More From Sheep (MMFS)

When Carly Bussenschutt (pictured) attended her first MMFS event in 2010, she had just stepped aside from a research agronomy career on South Australia's Yorke Peninsula to take over managing her family's 2,000ha prime lamb and beef enterprise. Eighteen months ago Carly and her husband Adam bought their own farm on the island, where they now apply MMFS management principles.

What was of most value when you first took part in the MMFS program?
Soon after I came back to the farm I did a customised version of the Prograze course, offered as part of MMFS. It was fantastic because it was run by local people who knew the local area and issues. We worked as a group for at least six months, visited each other's farms, saw what other people were doing and talked amongst ourselves, which was a really practical way to learn.

Longer term, what has been the most valuable?
The main thing we have carried through our business from MMFS is condition scoring our ewes, targeting that 2.5–3 condition score, and preferentially feeding our lighter ewes. We also use feed budgeting and apply the pasture management principles.

Producer: Michael Cobiac, Reedy Creek, SA

Program: More Beef from Pastures (MBfP)

Michael Cobiac (pictured) worked in cattle and pasture management research in the Northern Territory, as well as in the oyster industry in South Australia, before returning to the family farm at Reedy Creek, South Australia in 2010.

What was of most value when you first took part in the MBfP program?
I worked off the farm for a long period and when I returned I wanted to refresh my skills regarding cattle and sheep management in the temperate zone. I was looking for the most up-to-date research findings for this southern area. The thing I liked most about MBfP was that it collated a lot of current information in one place, in a simple form.

Longer term, what has been most valuable?

Understanding the steps to maximise fertility in my breeding herd. Firstly, such as achieving cattle body condition score targets (Weaner Throughput module) through efficient production and utilisation of pasture (Pasture Utilisation module), and an effective disease prevention program (Herd Health and Welfare module), provide the environment for high fertility. Secondly, in a self-replacing beef herd such as mine, ensuring new bulls have desirable genetic merit for fertility traits (Cattle Genetics module) provides the capacity for high fertility. If I get both of these right, high productivity will follow.

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More Beef from Pastures **www.mbfp.mla.com.au**

Rotational grazing

Getting the principles of pasture management right

When Jock Hughes went looking for ways to use more pasture while maintaining small stud mobs, he wanted management practices that were both time and cost effective.

After completing the Australian Wool Innovation Lifetime Ewe Management course and continuing on to the Pasture Principles program, he presented his approach to producers at the MLA-sponsored Red Meat Updates conference in 2016.

The Hughes family's seedstock business, Cluden Newry Angus, located about 25km south of Launceston, combines Angus cattle, prime lamb production and opportunity cropping. Before the family began their improvement program, the property was understocked, with a lack of grazing pressure leading to lower quality regrowth and infestations of grass weeds like browntop bent.

Jock knew there were obvious benefits to rotational grazing before beginning the Pasture Principles program but had avoided rotations. The need for small cow mobs for single-sire mating and small bull mobs for managing social behaviour made grazing management challenging.

Joining the dots

The Pasture Principles program, which uses modules from MLA's More Beef from Pastures and Making More From Sheep, helped Jock understand the relationship between plant requirements and leaf emergence rates and pasture growth, and assisted with feed budgeting and planning. Key areas of the program included measuring and predicting pasture growth, allocating pasture on a dry matter basis and understanding animal requirements for maintenance, growth, pregnancy and lactation.

"There was plenty of useful information around pasture growth habits and ways to maximise production, utilisation and persistence, which made the extra work associated with rotational grazing management worthwhile," Jock said.

The Hughes family started small, implementing infrastructure and management changes on irrigated ground where lost opportunities were most obvious, before moving on to dryland pastures.

"Using an irrigation system developed for cash crops had enabled us to grow more ryegrass, but then we had to manage that feed to ensure we got a maximum return on our time and money," Jock said.

Successful implementation also hinged on training animals to respect electric-tape fencing, as well as further investment in stock water systems.

Jock said the learning didn't stop when

Snapshot

Jock Hughes, Longford, Tasmania

Property: Owned, leased and share-farmed country 820ha

Enterprise: Seedstock Angus, prime lambs, opportunity cropping (poppies, peas, grass seed, carrot seed)

Livestock: 300 Angus breeders and 2,000 Coopworth ewes

Pasture: Predominantly ryegrass and white clover

Soil: Brown sandy loam

Rainfall: 650mm (average annual)

the Pasture Principles program ended. He has sought advice from an agronomist and still meets with his producer group for advice and ideas for further improvements to the property systems.

"Checking what fellow producers are doing, especially with regards to managing livestock on centre pivot irrigation, including fencing and water infrastructure, has helped our enterprise continue to improve," he said.

Jock's pasture management gains

- stocking rates can be maintained through dry years without off-farm supplementation
- stocking rates have increased by 25%.
- pasture response to rain has substantially improved
- the increase in sheep mob sizes has cut the time spent checking mob
- cattle have become used to human handlers and show less flight tendency

...and pains

- we are tied to the farm because stock have to be moved every three days
- keeping crossbred ewes within grazing cells has proven difficult
- controlling weight gain in pregnant ewes to avoid lambing risks has been hard
- ewes need to graze dry matter right down, which goes against the ideals behind Pasture Principles

...and his go-to digital tools

- Pastures from Space – a satellite-based resource to monitor pasture coverage and growth rates
- Excel spreadsheets – to plan for feed excesses and shortages
- apps for stock movements – we are investigating tools to streamline recording of stock movements.

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www.redmeatupdatesdotcom.files.wordpress.com/2016/03/jock-hughes.pdf

Pastures from Space: **www.pasturesfromspace.csiro.au**

The 2017 Red Meat Update will be held 28 July at Launceston **www.redmeatupdates.com**

Making More From Sheep **www.mmfs.com.au** and More Beef from Pastures **www.mbfp.mla.com.au**

Pasture rundown

Legumes give hope for pasture revival

Sown pasture rundown, which causes the gradual – often imperceptible – erosion of productivity, is an issue no producer can afford to ignore.

Defined as the decline in ageing grasses, rundown is caused by a reduction in nitrogen availability as it is 'tied up' in soil organic matter.

Researchers estimate this problem will cost northern beef producers more than $17 billion in the next 30 years. Research suggests that without intervention or practice change, some producers will struggle to remain viable.

Agri-science Queensland Senior Pasture Agronomist Gavin Peck coordinated an MLA-funded project to help producers in the Brigalow Belt understand the causes of rundown and management options to improve productivity.

Gavin said the producer reaction to the project's extension component showed there is widespread concern and interest in finding practical solutions.

"We ran 32 workshops across southern and central Queensland between 2011 and 2015. These were attended by 418 producers who collectively managed more than 814,000ha of sown pastures, 286,000 cattle and 42,000 sheep," he said.

"As a result of these workshops, we conducted 157 on-farm demonstrations or research trials initiated by workshop participants who worked with us to develop their own management strategies to tackle pasture rundown.

"An overwhelming majority (84%) planned to introduce legumes to their pastures (as a result)."

Preventing pasture rundown

A significant part of this project has been to investigate what legume varieties persist best in the region's loam to clay soils and what impact they can have on beef production.

Gavin said there had been considerable debate on whether legume varieties for sub-tropical clay soils can be successful with competitive tropical grass pastures.

"Newer legume species such as Caatinga stylo and desmanthus performed well in evaluation trials but have generally performed poorly in commercial conditions," he said.

"Some producers and advisers suggest that these legume varieties are 'doomed to fail' commercially due to technical issues; whereas others have concluded that management of legume-based pastures, especially establishment, needs to be improved if any are to be successful in the long-term."

Legumes – the best performers

Forty-four established trial sites, planted at least 10 years previously, were assessed to discover which legume species persisted (see Table 1).

All trial sites in central Queensland had clay soils and in southern Queensland they were mainly clay soils, but included several loamy and sandy soils.

$17 billion

the forecast cost of pasture decline to northern beef production in the next 30 years

Caatingo stylo

- persisted at the greatest percentage of trial sites (89% of sites where it was sown)
- is widely adapted, persistent and productive across southern and central Queensland with the ability to spread and thicken over time
- is negatively affected by high grass competition
- may struggle in heavily frosted areas
- has been promoted as suitable for light clays to sandy loams in southern Queensland, and results in central Queensland's heavy clay soils suggest it should be recommended for heavier clay soils in southern Queensland, as well
- was found persisting and spreading south of Roma on a loamy soil, providing an opportunity to extend the range of persistent legumes for light soils further south (these stylo lines are now being evaluated in a separate project)
- has persisted on some extremely low phosphorus soils (Colwell P <5mg/kg).

Desmanthus

- was the second-most-persistent legume (D. *virgatus*) at 79% of sites sown
- persisted better on grey cracking clays and loamy clay soils than basaltic black cracking clay or sandier soils
- has persisted on extremely low phosphorus soils (Colwell P <5mg/kg)
- was the most commonly planted (in the form of the cultivar Marc); however, it appeared to have relatively low dry matter and poorer leaf retention into autumn/winter compared to stylos and some other desmanthus lines

- D. *leptophylla* showed lower levels of persistence than D. *virgatus* and a preference for grey cracking clay soils – it persisted at 73% of sites but showed low levels of persistence at 50% of sites
- as D. *leptophylla* (where it did persist) often appeared more productive with better leaf retention than D. *virgatus*.

(Two species were analysed, D. *virgatus* and D. *leptophylla*.)

Butterfly pea

- proved very particular about soil type and climate, only persisting on black cracking soils in central Queensland. Butterfly pea is usually recommended for short-term pastures.

Table 1 **Number of trial sites where legumes were planted and the number of sites where they persisted. (Dark green: persistent at a high percentage of sites, grey: persistent at a moderate number of sites, orange: persistent at low percentage of sites, red: not persistent at trial sites.)**

Common name	Number of sites planted	Not persistent	Persistence		
			Low	Moderate	High
Caatinga stylo	27	3	5	7	12
Desmanthus *(virgatus)*	33	7	5	7	14
Desmanthus *(leptophylla)*	22	6	11	2	3
Butterfly pea	20	11	2	2	5
Leucaena	16	9	2	0	5
Shrubby stylo	23	17	0	2	4
Fine-stem stylo	7	4	1	1	1
Burgundy bean	15	13	1	1	0
Siratro	15	12	1	2	0
Lotononis	7	5	0	1	1
Lucerne	13	13	0	0	0
Caribbean stylo	13	13	0	0	0
Round-leaf cassia	9	9	0	0	0

Pasture rundown

Gavin said the project revealed a disparity between common commercial beliefs about the persistence of some legume varieties in the subtropics and the actual results.

"Despite mixed reports from commercial plantings, the project proved that desmanthus and Caatinga stylo can be persistent and productive on clay soils over a large geographic area of Queensland," he said.

"Ironically, both desmanthus and Caatinga stylo persisted at a much higher percentage of sites than leucaena and shrubby stylo, which both have commercial reputations for being widely persistent.

"They are also able to persist on very low phosphorus soils where leucaena and other legumes have perished, which may offer an opportunity to extend the range of soils on which legumes can be planted."

Several other legume species did not persist well in long-term pastures, including:

- Caribbean, shrubby and fine-stem stylos; round-leaf cassia and lotononis, which did not persist and were better adapted to sandier soils and/or more monsoonal or wetter climates
- lucerne, burgundy bean and siratro, which are not persistent legumes in this environment. They are suited to short-term pastures.

Gavin and his team are now working on an MLA-funded project to develop and promote best practice guidelines for legume establishment and management in the Brigalow Belt.

Grow legumes for

- better pasture composition
- more total standing dry matter – up to 100% more pasture biomass
- up to 140% more dry matter production over a growing season
- higher animal weight gain
- estimated long-term benefits in pasture productivity (15–63%) and weight gain/ha (37–105%).

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Seeds for grazing success

With so much choice in the pasture and legume seed market, producers can find it challenging to decide what will work best in their paddocks.

Results from an MLA-funded project will make options clearer for Queensland producers. The study evaluated the grazing performance and persistence of up to 29 legumes and 30 grasses in replicated small-plot experiments on key land types in moderate rainfall zones of north and central Queensland.

Queensland Department of Agriculture and Fisheries (QDAF) researcher Kendrick Cox and his team are in the third year of this five-year project, that is principally targeting pasture legumes.

"We're moving to the next stage as we've identified five or six higher-performing legumes and grasses for key land types. We will now evaluate on a broader scale, targeting improved nutrition of key livestock classes such as weaners," he said.

"These will include newer varieties under development plus some older varieties tested in other areas.

"Once we have finalised the best performers, we will test them as grass–legume mixtures under grazing and promote adoption through field demonstrations.

"We will also complete seed increase of newer legumes and grasses through our north QDAF pasture seed program and work with seed companies to ensure the availability of seed to producers."

Some of the more persistent, and well grazed, 'best-bet' legumes and grasses identified for the duplex and basalt soil groups are:

Legumes

Low rainfall

- *Desmanthus virgatus* and *D. bicornutus* (Marc, ES203, Progardes)
- *Stylosanthes seabrana* (Primar, Unica)
- *S. scabra* (Seca, Siran plus newer types)
- *Macroptilium gracile* TGS849

Moderate rainfall

as for low rainfall plus:

- *M. atropurpureum* (CPI84989)
- *M. bracteatum* (Juanita, Cardaarga)
- *Clitoria ternatea* (Milgarra)
- *S. guianensis* (ATF3308/3309S).

Grasses

Low rainfall

- *Panicum maximum* (Massai and NuCal)
- *P. coloratum* (ATF714, green type)
- *Digitaria eriantha* (Premier)

Moderate rainfall

as for low rainfall plus:

- *Brachiaria brizantha* (Toledo)
- *Brachiaria hybrids* (Mulato 2, S155)
- tetraploid *Chloris gayanus*
- *Digitaria milanjiana* (Strickland, Jarra)
- *P. maximum* (Gatton and G2)
- *Urochloa mosambicensis* (TGS1012).

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Learning about legumes

Peter and Bev Quinn with their son Matthew at 'Essex', Middlemount.

Peter and Bev Quinn have focused on pasture improvement since they began farming their property in the late 1970s.

After pulling the country (removing shrubs and trees with chains pulled by bulldozers), Peter said he knew they needed to replace the naturally occurring nitrogen.

"I had seen what had happened to some country 30–40 years after clearing where there was no (soil health or pasture) improvement," he said.

"I have tried every legume since I started blade ploughing in the mid '90s. I knew if we could get good legume establishment it would benefit beef production and profitability."

Blade ploughing involves pulling a single-tyne plough with a bulldozer to clear shrubs and groundcover while sowing improved pastures in a single pass.

Peter said the heavier clay soils on his property had limited the success of stylos, but he'd had good results with butterfly pea, especially on 'Taemas'.

"The butterfly pea there is six to eight years old and still producing prolifically, even after the tough seasons we've had," he said.

"Its persistence has surprised me. It's totally palatable and the cattle love it."

Despite problems in obtaining sufficient quantities of seed, Peter introduced desmanthus when it became available in the early 1990s.

"Desmanthus was hard to get then as it was new and it was super expensive. But where it was sown, it is still going really well."

Four years ago, Peter began growing Progardes, a blend of superior desmanthus lines. Having had success with desmanthus, he knew the new product would persist and that the cattle liked it.

"The newer varieties are a bit more drought tolerant," he said.

"Where we've fluked a bit of rain on them over a couple of seasons, it's been impressive. It grows well and recovers from dry weather."

However, growing legumes on this country remains challenging, and information on establishment is scarce.

"Establishment is an issue – that's our biggest battle on unprepared ground," Peter said.

"The seed is tiny and the expense to do it (prepare soil) properly is limiting."

Peter said he wanted to see more research relevant to the rough, blade-ploughed country that many Queensland beef producers are working with.

"The majority of the trial work on legumes is done on ex-cultivation country, but that is not representative of our situation. The real deal is in the rough country," he said.

Snapshot

Peter and Bev Quinn, 'Essex', Middlemount, and 'Taemas', 130km south of Charters Towers, Queensland

Property: 34,000ha

Enterprise: 7,000 Charbray, Brahman and Charolais purebred cattle (2,500 at Taemas, 4,500 at Essex).

Soils: 'Essex' – Brigalow, blackbutt clay to duplex. 'Taemas' – one-third blackwood clay scrub, and the rest open ironbark desert rangelands, duplex sandy soils

Rainfall: 635mm

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For more information on legume establishment go to **www.futurebeef.com.au** and search 'sown pasture rundown' and 'legumes'

Wild dogs

The Invasive Animals CRC, which is part-funded by MLA, is a key player in the development of Australia's first National Wild Dog Action Plan. It has developed a suite of best practice tools and strategies to help producers reduce the impact of wild dogs on their livestock.

National wild dog facilitator Greg Mifsud said strategic baiting, trapping and coordinating control efforts with neighbouring properties were among the most powerful tactics pastoralists could use to reduce stock attacks.

"From 2012, we mounted a grassroots campaign to show NT pastoralists and station staff how effective coordinating baiting programs with neighbours could be and how strategic trapping, which traditionally hadn't been used much in the NT, could be really effective," he said.

"Now we're seeing canid pest ejectors – ground-fixed devices that deliver lethal doses of 1080 poison into the dog's mouth – becoming more commonplace as producers feel more comfortable with using multiple control options."

Taking control of stock losses

If it's feral, got four legs and lives in the Northern Territory, there's a big chance Adam Bowen has trapped, baited or shot it.

The professional contract pest controller, based in Katherine, has had cats, pigs, buffalo, camels and donkeys on his hit list, but the most requested service by far is to reduce the impact of wild dogs on livestock.

"I usually travel more than 30,000km a year, from the Queensland border to Adelaide River. Since cattle prices have risen, more pastoralists are taking stock of what they're losing and are investing in good control programs," Adam (pictured opposite) said.

Adam works both ends of the pastoral spectrum: from the NAPCO-owned Alexandria Station on the Barkly Tablelands, Australia's second largest pastoral property, to hobby blocks on the edge of Katherine.

Adam said last year he trapped 26 dogs on a 405ha cattle stud in just six weeks.

His tools of the trade vary; however, baiting with 1080 is his weapon of choice.

"In a normal year I would put out between 30,000 and 45,000 baits,

usually in May/June and then again in September, October or even November, depending on the rains," he said.

"I like to have baits in place as protection for when the earliest cows start calving, particularly if the dry has been tough.

"In places such as the Barkly region, there are not a lot of other target species for dogs so a young calf is easy pickings."

Finding the right tools

With such a variation in location and terrain, Adam uses a suite of tools to reduce dog numbers.

"On the larger places, where watering points are really spread out, trapping is not a humane option," he said.

"The NT has not approved the use of lethal trap devices (where traps are laced with strychnine ensuring animals are not left to suffer), so that leaves only on-ground and aerial 1080 baiting."

Adam has started using the relatively new canid pest ejector, a spring-activated device that ejects the 1080 from a capsule into the dog's mouth when it pulls on a bait head.

He said these devices were growing in popularity as pastoralists saw the value of being able to bait close to houses and in laneways, where station dogs and pets might be at risk.

The devices are pegged into the ground and can't be moved, so the 1080 will stay where it is placed. Another benefit is that carrion consumers like goannas and eagles can't steal the baits, so the ejector device is always ready to go when a dog comes along.

"On one station we have pest ejectors set down a laneway," Adam said.

"When cattle need to be moved through, each ejector is covered with an old plough disc.

"Once the cattle and station dogs have passed, the discs are removed and the traps are reactivated.

"The pest ejectors are also popular with my clients close to town because of the reduced off-target risk and, because the ejector is fixed, an animal can't take the bait away and store it to eat later."

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Trapping more profit

Trapping is often dismissed as an ineffective and impractical wild dog control tool for large pastoral enterprises but according to Rhys Arnott, if done strategically, it can save beef businesses thousands of dollars.

Former Heytesbury Cattle Company rangelands manager and facilitator of the Victoria River Downs Conservation Association, Rhys has had plenty of on-the-ground experience in reducing dog numbers.

He coordinated baiting efforts from 2013 to 2015 on 20,000sq km of 'Victoria River Downs' and trained Heytesbury staff and staff from other stations in ground baiting and trapping.

While a keen advocate of using 'all the tools in the box' coupled with proper staff inductions and in-the-field training, Rhys said there was no doubt 1080 baiting was the most effective tool.

"That said, you can make an even bigger impact if you trap strategically as well, particularly around watering points and other high-risk areas such as weaner paddocks," he said.

Rhys, now facilitator of the Roper River Landcare Group in the Katherine region, said giving a bore runner an extra hour a day to set and check traps while on their run is more than justified when considering the potential savings.

"A male dog in the wild will live for about eight years. A pair of dogs will kill about one beast a month so let's assume a pair kills 12 animals a year for an average of seven years – that's 84 animals," he said.

"That means one dog will kill 42 animals over its lifetime, which at present prices equates to about $42,000 worth of stock.

"On an annual basis, one dog is costing a station about $6,000 a year."

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www.invasiveanimals.com

Go to **www.pestsmart.org.au** to find the Glovebox Guide for Managing Wild Dogs and to see a demo of the canid pest ejector.

Wild Dog Scan – a free tool that maps and records wild dog activity **www.feralscan.org.au/wilddogscan/map.aspx**

Managing mineral deficiencies

Ewes grazing cereal crops, while in the reproductive phase, are at risk of developing metabolic disorders caused by mineral deficiencies, such as hypocalcaemia or hypomagnesaemia (grass tetany). This risk can be significantly reduced if the correct supplements are provided, MLA-funded research has revealed.

The research, now in its third year, confirmed that grazing dual-purpose and spring varieties of wheat, barley and oats can lead to metabolic disorders in reproducing ewes, due to the lower-than-required levels of calcium (Ca), magnesium (Mg) and sodium (Na) and a higher-than-tolerable level of potassium (K).

However, Dr David Masters, a livestock systems scientist working on the project with Murdoch University, Charles Sturt University and the NSW Department of Primary Industries, said the traditional industry supplement of lime/salt/causmag (40:20:40) could improve the mineral status of reproducing ewes. Research is underway on the development of an even more effective targeted supplement that will further reduce risk.

The research team also found ewes grazing wheat were most at risk of deficiencies and, while risks with barley or oats appear lower, further investigation is still needed.

How the trials were conducted

In the first year of trials, the mineral status of forage and of pregnant ewes grazing vegetative crops was monitored on 18 farms in Western Australia and southern and central NSW in the final third of pregnancy for 14–24 days.

The following year six farms were used with a paddock on each farm divided into three plots to provide forage for 30 ewes for about one month. The ewes were mature, mostly twin bearing and in the last third of pregnancy.

One group was given no supplement (control), another was provided with the standard industry supplement (lime/salt/causmag) and the third group was provided with a mineral supplement specially designed to address potential metabolic disorders.

"The results showed that both mineral supplements improved Ca and, to a lesser extent, Mg status and decreased the risk of hypocalcaemia and hypomagnesaemia. In the control (the unsupplemented ewes), Ca in plasma and urine was in the deficient range for some ewes," David said.

Dr David Masters
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While research is ongoing, David said the key findings to date were:

- a high proportion of grazed crops have forage Ca, Na and Mg content below ewe requirements and K content above tolerable levels
- reproducing ewes grazing wheat, and possibly oats and barley, are at risk of metabolic disorders
- Ca deficiencies in reproducing ewes can be reduced by feeding a lime/salt/causmag supplement.

Animal health

Tail docking best practice

Australian sheep industry recommendations for tail docking length have remained the same since the 1930s: 'Don't dock short!' New MLA-funded research has reinforced this advice by proving a link between short tail docking and bacterial arthritis in lambs.

Project leader Dr Joan Lloyd found docking lambs' tails short offers no benefits and instead causes harm – to both animal welfare and industry profitability.

She said tails should never be docked higher than the third palpable joint and producers and contractors should follow the best practice guidelines outlined in the MLA booklet, *A producer's guide to sheep husbandry practices.*

Arthritis is estimated to cost the sheep industry $39 million a year due to poor growth rates and deaths on farm, and losses at abattoirs due to trimming and condemnations.

"Arthritis caused by bacterial infection of joints has been identified as a priority endemic disease for MLA research investment," Joan said.

"Bacterial arthritis occurs when lambs have a break in their skin that becomes infected. They then get septicaemia, or blood poisoning, and blood-borne bacteria lodge in a joint.

"My hypothesis was that delayed healing from docking too short, and subsequent infected tail stumps, can cause septicaemia and arthritis.

"That hypothesis was confirmed by the research, with a statistically significant and higher rate of arthritis in lambs that had been docked short, with just one or two palpable joints remaining, compared to lambs docked with three or more palpable joints remaining."

Joan said recommendations regarding tail docking length were equally applicable to mulesed and unmulesed sheep.

She said short tail docking had a number of other negative health impacts including:

- → rectal prolapse in lambs
- → increased flystrike risk due to muscle damage, which makes it impossible for sheep to move their tail out of the way when defecating and urinating
- → skin cancer in older sheep.

"Shearing cuts, mulesing, poor lamb-marking hygiene and grass seeds are other potential sources of bacteria that can cause arthritis, but short tail docking is an easily avoidable one," Joan said.

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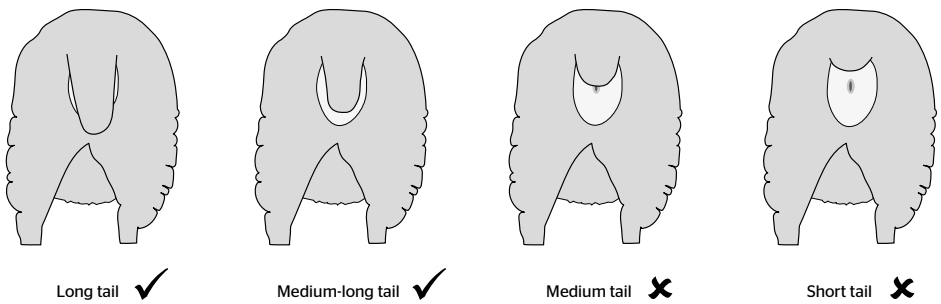
Figure1 **Recommended tail lengths**



How to do the job right

Best practice tail docking involves:

- → docking lambs at two to eight weeks of age
- → docking just below the third palpable joint or through the third joint space (tails can also be docked longer, at the fourth joint)
- → leaving a docked tail on females that extends just below the tip of the vulva
- → allowing for a healed tail that will protect the anal region and vulva
- → docking female and male lambs (mulesed and unmulesed) to the same length
- → not cutting through the bare area on the underside of the tail
- → using a gas-heated tail-docking knife designed to remove the woolly skin on the tip of the tail (a lamb-marking knife is not recommended and mulesing shears are unacceptable)
- → using an accredited livestock contractor who is competent, has the correct equipment and docks to the correct length
- → using appropriate pain relief (www.animalwelfarestandards.net.au)
- → giving lambs their first dose of tetanus or clostridial disease vaccine at the same time
- → docking only for a welfare benefit – not for cosmetic reasons
- → docking only suitable breeds; do not dock shedding and short-tailed breeds.

Search 'A producer's guide to sheep husbandry practices' at **www.mla.com.au/publications**

Genetics

Bolstering Brahman knowledge

Brahman breeders now have more accurate estimated breeding values (EBVs) for days to calving and a better awareness of significant in-breed variations of carcase traits following the breed's largest progeny test project.

An intensive recording program, the Brahman Beef Information Nucleus (Brahman BIN) measured traits from progeny of 75 of the breed's most influential and up-and-coming sires raised in commercial conditions.

Project coordinator, Tropical Beef Technology Services' Paul Williams, said the project was already having an impact on the future direction of the breed.

"Breeders have strong, meaningful data to better select sires that will improve profitability," he said.

What came out of the BIN?

Carcase traits: Performance data from the BIN has improved accuracy of carcase EBVs to 60% and growth traits (200, 400 and 600 days) have improved to above 85%, with most of the sires over 90%.

Performance data was collected for flight time and weight as well as carcase scanning for rib fat, rump fat and eye muscle area. Processors carried out carcase measurements on the animals.

"These improvements mean the breed is now in a better position to make faster progress for these important traits," Paul said.

Reproductive traits: The raw data revealed a large variation between sires in age of puberty (linked to fertility) and rebreeding rates.

"We found while 85% of cows returned pregnant, there was a six-week variation in the average calving date between sires," Paul said.

"While the environment was a major factor, genetics play a big role and selection for bulls with good fertility information will improve the number of calves on the ground each year.

"The information we collected on these females has been submitted to BREEDPLAN and its impact has seen accuracy for their sires' days to calving EBVs improve from previously 30% at best, to now as high as 60%."

Eating quality: The steer progeny also revealed new information about the breed's carcase traits and the varying influences of its leading sires.

Shear force, the measurement for tenderness, was another trait that showed surprising variation.

"There is over a kilogram of difference in shear force between the steers of the top sires and bottom sires, which is the difference between what is considered a good eating quality and what is tough to eat," Paul said.

Operating the BIN

Commercial cow herds at 'Banana Station', Banana, 'Baradoo Station', Bauhinia (see page 35), and at CSIRO's research station 'Belmont' at Rockhampton were joined to the 75 sires involved in the program.

The resulting 844 steers (pictured) were all sent to Banana Station at weaning, where they were grown out on grass to meet Japan ox specifications while the 949 female progeny were retained in the program for re-joining.

"The females were retained for their first two calves with joining information submitted to BREEDPLAN for calculation of days to calving EBVs," he said.

The Brahman BIN was funded by MLA Donor Company (no producer levies were used) and conducted by the Australian Brahman Breeders' Association.
It concluded in April 2017.

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Read the latest update at
http://tbts.une.edu.au/

Supporting the science

Annie Donoghue, of Barranga Grazing, believes the MLA Donor Company-funded Brahman Beef Information Nucleus (BIN) is already influencing her bull-buying decisions.

With her husband, Rob, Annie ran one of the project's co-operator herds on their Bauhinia Downs properties.

The couple helped the research team intensively measure and record a number of important traits, including fertility and carcase quality, to improve the accuracy of Brahman BREEDPLAN estimated breeding values (EBVs). Annie spoke to *Feedback* about the project.

Q: There's a lot of work in running a co-operator herd. Why did you get involved?

A: I believe in what the project is trying to achieve. Collecting data on fertility, growth and carcase traits from a broad selection of influential sires will return a lot of value to industry. Large amounts of data are required to validate and develop genetic selection tools. Projects such as this help with the pool of data available and are particularly beneficial due to the influence many of these sires have across the breed. Personally, I'm interested in fertility and the future direction for the breed from using DNA to help with genetic selection.

Q: How will more accurate Brahman EBVs help you?

A: We're always looking for ways to improve our herd, particularly by using tools to reduce the risk of decisions that we make. We breed and finish here, so fertility, growth and carcase traits are all important selection aspects for our future genetic direction. Accuracy and availability of an EBV like days to calving is improving, which means we have more options to use it as a sire-selection criterion.

Q: Were there any challenges with collecting data in commercial conditions?

A: Environment and seasons have a strong influence on cattle performance and we certainly experienced a variety of seasons during the project. For the data to be valid, we were unable to use some management practices that we may have usually used in dry seasons, such as early weaning prior to bulls coming out to boost pregnancy rates and body condition scores. In all seasons there was still significant variation in progeny performance, and it is important to highlight that there is opportunity to be able to select for genetic influence on different traits.

Q: What have been the best outcomes for you?

A: The research opens your eyes to what's possible. Part of the project focused on measuring fat depth, and rib and rump fat, as well as eye muscle using an ultrasound scanner. Seeing the machine in action inspired us to consider how we could utilise a tool like that in our own herd. We now fat scan animals ready for sale to identify those that meet market specs.

Also, I've a better understanding of the raw data that is used to create EBVs and I feel I can use them with more confidence. I've got a better awareness of how selection indexes are calculated and where the different degrees of emphasis are applied.

Annie and Rob's involvement with Brahman BIN finishes this year with pregnancy testing of the third cohort for their second calving.

Snapshot

Rob and Annie Donoghue , Barranga Grazing, 'Baradoo', Bauhinia, Queensland

Property:
47,700ha

Enterprise:
Breeding and turning off at feedlot weights, MSA specs or Japanese ox trade, depending on seasonal conditions

Livestock:
4,000 crossbred breeders

Pasture:
Improved brigalow to native pastures on forest-type country

Soil:
Heavy clay through to sandy box

Rainfall:
600mm

Market compliance

Meeting the MSA market

Beef producer Geoff Roberts, from Wagga Wagga, NSW, focuses on the consumer when managing his Meat Standards Australia (MSA) registered Murray Grey herd.

Geoff (pictured), who runs the 1,600ha property 'Wingelo' with his wife Gaye and son Tim, was one of the early adopters of the MSA program. In the past two-and-a-half years, 95% of their cattle have been MSA compliant when processed, with an average MSA Index score of 61 which is above the 58.5 national average for grassfed cattle in 2015-16.

"It's just a matter of talking to the processors about what they need and where we might be coming up short, and doing something about it," Geoff said.

"A better understanding of what makes a good end product can only help the producer, the processor and most importantly the consumers, as well as the cattle industry as a whole."

The self-replacing Murray Grey herd forms 75% of the operation, with lamb, wool, grain and hay making up the difference.

Steers are grown out to meet a 300-320kg carcase specification for sale direct to processor, Teys.

Geoff's strategies to consistently reach MSA standards include:

Genetics: Geoff constantly aims for above-average MSA Index scores, and said improved genetics would take his family's herd into the future.

"There's always room for improvement – when you stop improving, that's when you slip back," he said.

More recently, bulls have been selected for improved eye muscle marbling and rib fat coverage.

Breeder management: "The profitability of our herd is based on fertility," Geoff said.

Selected heifers are retained for breeding and all females are preg-tested. The family doesn't retain empties or cows after their fifth calf.

Cattle care: "Welfare has always been a top priority for us. Obviously well-fed, placid cattle are going to score better on the MSA Index and eat better for the consumer," Geoff said.

"We know there's a growing market out there for grassfed cattle and consumers want to know they've lived a healthy, contented life."

The enterprise is also Pasturefed Cattle Assurance System accredited.

Behaviour: "If the cattle don't have a good temperament, they'll give high pH meat," Geoff said.

The family starts training early by feeding calves silage for at least two weeks while they're still on their mothers and weaning in a paddock with limited pasture.

"This way, they get used to us being around while they're still young," Geoff said.

Geoff Roberts
E: wingelopc@gmail.com

To predict the potential impact of production changes on your scores visit the MSA Index calculator at **www.mymsa.com.au**

Snapshot

Geoff and Gaye Roberts, Wagga Wagga, NSW

Property:
1,600ha

Enterprise:
Beef cattle, prime lambs, wool and some cropping

Livestock:
Self-replacing Murray Grey herd aimed at a 320kg carcase sold direct to processors and a self-replacing Bond sheep flock

Pasture:
Porto cocksfoot and clover-based pasture

Soil:
Heavy clay

Rainfall:
675mm

Feedbase

Digging deeper on copper

Can copper deficiency in sheep be blamed for low conception rates? MLA-funded research indicates the answer is 'no'.

AgriPartner Consulting ran the project on six properties in South Australia and Victoria with low copper levels.

"We found no consistent effect of copper supplementation on sheep conception rates," principal consultant Hamish Dickson said.

"The history of this misconception is driven by the relationship between molybdenum and copper. Many minerals, including molybdenum, interact with copper and can reduce its availability to animals. High molybdenum has been shown to reduce ovulation rates and it is likely that this incorrect diagnosis has caused copper deficiency to often be blamed as the cause."

The trial did find, however, that severe copper deficiency can significantly increase ewe and lamb mortality rates. This is likely to be because of copper's importance in proper immune function in sheep.

"Where severe copper deficiencies were observed, marking percentage was reduced by up to 15% and, in some instances, up to 30% of ewes did not rear a lamb," Hamish said.

Identifying if there's a problem

The trial investigated the correlation between soil, pasture, blood and liver copper concentration to help determine the most effective strategy to identify any deficiencies.

Hamish said pasture tissue testing was the most reliable and cost-effective strategy to determine whether a potential copper deficiency needed addressing. Poor correlations were found between soil or blood copper concentration and the liver copper concentration.

Addressing copper deficiencies

A copper supplement was effective in elevating the animals' copper status and reducing the impact of deficiency on productivity. A range of copper products was trialled, including an injection, water trough block, loose lick, ruminal capsule and ruminal bolus (a slow-release device). Each was effective at elevating liver copper concentration, generally in line with the copper dose rate of the product.

"Selection of the most appropriate copper supplement product will largely depend on the timing and severity of the identified deficiency," Hamish said.

Where a seasonal copper deficiency exists, a short-term supplement such as a loose lick would be the most appropriate.

The copper dose rate of the product should be formulated to counteract the severity of the deficiency. Hamish warned that excessive copper supplementation can be toxic to sheep so professional advice should be sought on the correct dosage.

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A full report on the project can be found by searching for 'copper' at **www.mla.com.au/research-and-development/search-rd-reports**

Tedera makes progress

The successful harvest of the first seed increase (4ha) of tedera has brought the hardy perennial legume one step closer to being commercially available, according to Dr Daniel Real from Department of Agriculture and Food WA.

Tedera is a perennial forage legume, native to the Canary Islands, suited to the medium and high-rainfall areas of southern Australia with drought-tolerant qualities and the ability to produce green feed during times of the year when feed availability is usually limited.

"Regional field evaluations since 2006 have shown tedera can remain green year-round and most importantly from summer to early winter in Mediterranean-like regions," Daniel said.

"A series of duty-of-care animal trials have found no health issues in ruminants grazing tedera. Our grazing trials have also shown that tedera is a high-quality, palatable legume, which is readily grazed and can withstand both rotational grazing and set stocking."

Tedera can be continuously or rotationally grazed to fill the summer and autumn feed gap with no need for supplementary feeding. Whole-farm bio-economic linear programming model (MIDAS) analysis indicates tedera offers the potential to significantly increase farm profit by delivering savings in supplementary feeding, higher stocking rates and reductions in labour.

"We proved we can sow tedera with commercial machinery and now we have shown we can harvest with commercial machinery – with adequate yields," Daniel said.

The final stage of the domestication of tedera will see commercial partner, Seednet (Landmark's seed business), expand seed increase of the first commercial tedera cultivar during 2017–18.

An agronomy package to accompany the commercial release of tedera has also been developed.

The package outlines:

- → time of sowing
- → sowing rates, row spacing and sowing depth
- → nutritional (fertiliser) requirements
- → herbicide tolerance
- → recruitment management
- → defoliation management
- → hard seed softening
- → regional adaptation to marginal conditions.

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CoMarketing

Fine meat direct from the farm

In recent editions of *Feedback* we've profiled Australian companies who have built their customer base by working in partnership with MLA's Collaborative Marketing (CoMarketing) Program. In this edition, we talk to Richard and Elizabeth Gunner about how they have used the program at various times during the development of their South Australian-based paddock-to-plate business.

Richard and Elizabeth Gunner established Richard Gunner's Fine Meats in 2001 to fill a gap in the market for local, regionally branded beef product. The company's flagship brand, Coorong Angus Beef, paved the way for a string of Feast! Fine Foods stores that supply contracts with some of Australia's top restaurants.

Richard Gunner's Fine Meats has seven retail outlets throughout Adelaide and a production facility and boning room in the Adelaide Hills. The company specialises in heritage breeds and produces branded beef and lamb products, several of which are produced by family members. It employs 70-plus staff and has an $18 million annual turnover.

Elizabeth Gunner shared the company's journey with *Feedback*.

As producers, what motivated you to develop a brand and move into the next stage of the supply chain?

We believed a quality, local beef product would meet a favourable response and developed the Coorong brand to market Angus beef from the family's 6,500ha farm at a time when Angus wasn't on every menu; ours was only the second Angus brand trademarked in Australia.

We discovered a South Australian butcher was marketing our brand under another well-known label to attract higher margins. This substitution incident was the impetus to buy our first butcher shop, with the help of Richard's father, Perry, to control the paddock-to-plate pathway and ensure brand integrity.

Which markets are you selling your meat to?

Four Feast! Fine Foods' stores in Adelaide stock Coorong Angus Beef and other family-grown branded products, including Pure Suffolk Lamb and Willock Park English Longhorn. To utilise whole carcases we also opened three family-value stores selling house-made sausages, burgers and mince.

We supply more than 300 restaurants nationwide, including big names Rockpool, Restaurant Orana and Heston Blumenthal's The Fat Duck during its Melbourne stint.

How has MLA CoMarketing funding supported your strategic growth plan?

CoMarketing has helped us differentiate the Coorong Angus Beef brand in wholesale and retail markets, and to keep our products front-of-mind with activities including advertising and social media, and farm education tours for chefs.

This year, funding will underpin efforts to educate and excite consumers about Pure Suffolk Lamb, a seasonal product in a market accustomed to year-round product availability.

Did CoMarketing investment make a difference?

Retailers have been feeling the pinch of record high beef prices, but the CoMarketing investment enabled us to reinforce our brand attributes at a time when consumers are tempted by white meat alternatives. We suspect beef sales would have dropped further in this difficult retail environment without sustained marketing efforts.

What are your goals?

To stay ahead of the competition, we offer branded smallgoods, quick meal solutions and timesaving products for chefs and home cooks in addition to our staple lines. We plan to continue innovating in this way, adding value to every carcase and every cut while retaining our focus on superior quality.

www.feastfinefoods.com.au

Domestic marketing

Looking after the locals

The domestic market consumes 30% of the beef and 45% of the lamb produced in Australia. A multi-faceted MLA strategy is focused on maintaining and enhancing this market in the face of growing competition from other protein sources.

MLA Group Marketing Manager Andrew Howie said a focused strategy to defend the domestic market share was critical because it was the single most valuable market for Australian red meat.

"MLA's Domestic Market Strategy was developed to ensure we have a 'consumer first' view and strategies to defend our place in the category," he said.

Andrew said the strategy aimed to reinforce red meat as a healthy choice and inspire consumers to eat it three to four times a week. Four key aspects to the strategy are:

- → making consumers feel good about their choices through community and nutrition programs that reinforce red meat health benefits, and the welfare and sustainability practices of the industry
- → convincing consumers to pay a price premium by meeting needs for key meal occasions
- → influencing foodservice and retail to offer red meat options which meet consumer demands

Australian population:

24.3m → **25.6m**
in 2016 in 2020

Australian households earning $100,000+ p.a.

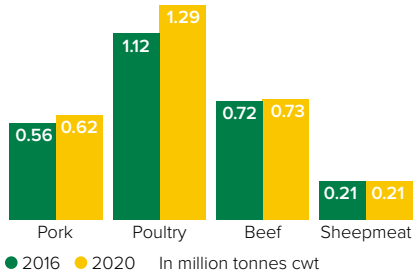
4.04m → **4.49m**
in 2016 in 2020

Figure1 **MLA's Domestic Market Strategy**

Growing demand

Meat consumption

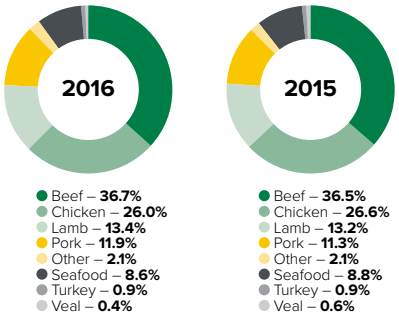
total meat protein*



Source: BMI Research, GIRA, 2016 and 2020 projection

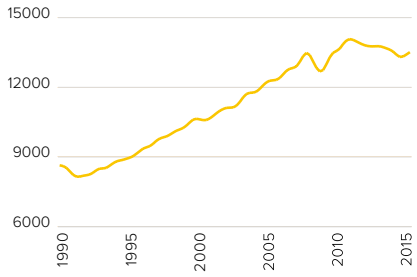
* excluding fish/seafood

Retail fresh meat value share



Source: Nielsen HomeScan MAT to 3/12/2016 vs. year ago

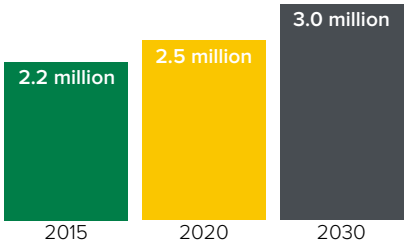
Australia's per capita disposable income



Per capita

Source: ABS

Single person households



Source: ABS

→ inspiring consumers by giving them information on meal solutions and the knowledge to prepare meals using a range of red meat cuts.

"To help identify future growth, the Domestic Market Strategy has been developed using a comprehensive range of data and evidence, including hard metrics such as sales trends and the prevailing trends in other western countries," Andrew said.

"We also consider soft metrics like tracking results from previous campaigns and surveys undertaken on specific topics such as 'reasons for eating less red meat'."

The complex nature of the supply chain means MLA has no influence on price. Andrew said that while retailers could use their own discretion to determine a pricing strategy, the MLA Domestic Market Strategy was designed to have a positive effect on consumer perceptions.

Median age of Australians

34 years → **37 years**

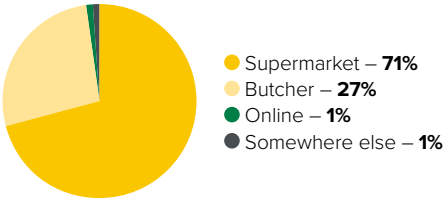
in 1995 **in 2015**

Supporting meal choices with facts

Using nutritional science is an important part of the strategy. MLA has a track record for delivering high-quality nutrition education resources that influence opinion leaders, including health professionals and media, who provide eating advice to their clients or audience.

"We have dual objectives informing our marketing strategy – industry and public health benefits. My role is to make sure consumers understand the importance of red meat as part of a healthy, balanced diet," MLA's Manager Nutrition Marketing Communications Veronique Droulez said.

Where do consumers typically purchase beef from?



Source: MLA Global Consumer Tracker, 2016

MLA-developed nutrition information resources highlight the importance of having palm-sized portions of red meat (beef, lamb, mutton, goat, pork, kangaroo and venison) three to four times a week, as per the Australian Dietary Guidelines.

"The general perception is that red meat is a nutritious food but Australians eat too much of it. In fact, the latest Australian Health Survey showed that red meat intakes were less than the 65g/day recommended in the Australian Dietary Guidelines," Veronique said.

Domestic consumers spent

$7.8 billion on beef and $2.2 billion on lamb in 2015-16

Source: MLA

"We also provide policymakers with relevant and timely evidence on the role of red meat in the Australian diet to ensure beef and lamb are accurately represented in the Australian Dietary Guidelines, nutrition policies and food regulations."

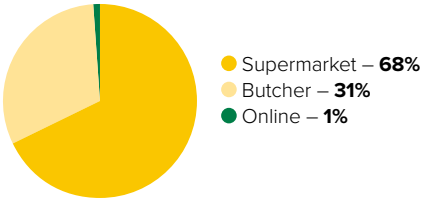
Healthy eating hot spots

MLA nutrition-based marketing is focusing on:

→ **Healthy choices:** MLA research showed that 74% of consumers wanted to make healthier meals. Veronique said providing practical tips and meal ideas to achieve this goal was a simple but effective way to provide support.

→ **Ageing demographic:** People aged over 65 have higher protein requirements, and MLA is exploring how these can be met through red meat meal solutions.

Where do consumers typically purchase lamb from?



Source: MLA Global Consumer Tracker, 2016

→ **Environmental impact:** Another focus of the marketing strategy is community interest in reducing food waste. Research showed that 76% of consumers wanted to know how to use different cuts of meat. In response, MLA is developing the Practical Cuts program that will provide recipes and explain cut suitability.

Sharing the industry's good news

The issues of sustainability and welfare in the red meat industry are also a strategy priority, according to MLA's Manager of Community Programs, Jax Baptista.

"We understand how important sustainability is for the community and the future of the red meat industry. Focusing on the provenance of food, meeting community expectations and recognising consumer concerns helps mitigate the risks of environmental impacts and animal welfare issues," Jax said.

"Our aim is to promote a sustainable and credible red meat industry to consumers."

MLA has an advocacy program to link producers to metropolitan communities.

Producers can help the program by:

→ participating in food festivals and community events

→ speaking at schools

→ talking to newspapers and radio stations and phoning or writing 'letters to the editor' to redress misinformation

→ undertaking MLA professional development assistance geared toward producer involvement in platforms such as Twitter, Facebook and Instagram or using mainstream media to promote business activities.

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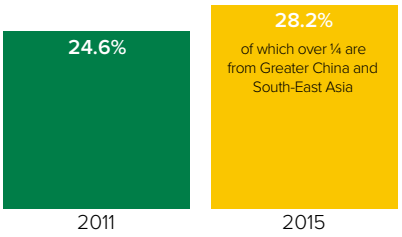
Jax Baptista // E: jbaptista@mla.com.au

Get connected to MLA's strategies through social media

Twitter: **@Target100AUS** // **@meatlivestock**

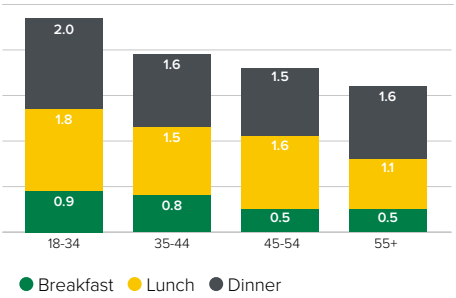
Facebook: **www.facebook.com/weloveourlamb/** or **You'reBetteronBeef**

Australians born overseas



Source: ABS

Average number of meals out of home per week by age



Source: MLA Domestic Consumer Tracker, 2016

Campaign news

Innovative domestic marketing campaigns for beef and lamb were rolled out by MLA earlier this year. What were they and how did they perform?

Lamb crosses cultural divide

Concept: Continuing the theme of unity and lamb's ability to bring people together, MLA's summer 2017 campaign placed lamb centre to celebrating modern Australia via the 'You Never Lamb Alone' platform.

Reach: 8.6 million views of the video and 1,460 items of media coverage.

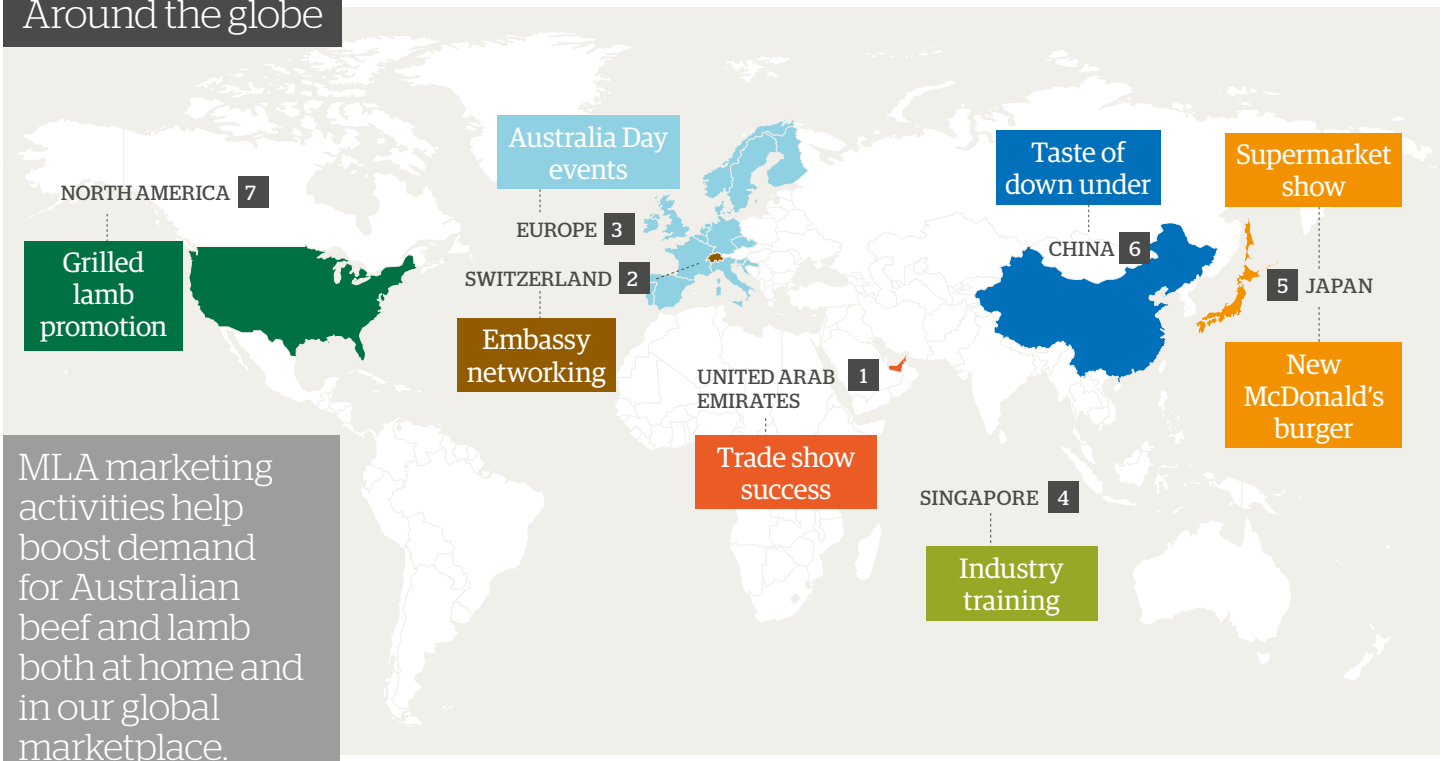
Dame Edna's influence

Concept: MLA research found one in three Australian women do not get enough iron. The 'You're Better on Beef' campaign enlisted the services of Dame Edna who reaffirmed that beef is the best natural source of iron.

Reach: 4.5 million views of the video and 137 items of media coverage.

Want more? Follow 'You Never Lamb Alone' and 'You're Better on Beef' on Facebook.

Around the globe



MLA marketing activities help boost demand for Australian beef and lamb both at home and in our global marketplace.

1 UNITED ARAB EMIRATES

Good food at Gulfood

More than 95,000 people from 120 countries attended the recent 22nd Gulfood Trade Show in Dubai, where MLA partnered with 27 companies to host an Australian stand. Producers, beef and lamb brand representatives, processors and manufacturers showcased products and strengthened trade relationships during the five-day event. Visitors to the stand were interested in natural and organic meats, product traceability and Halal integrity.

95,000

visitors at trade show

MLA also sponsored the beef and lamb categories in the Emirates Culinary Guild International Salon Culinaire cooking competition, held in conjunction with Gulfood. There were 350 entrants in the beef section and 40 in the lamb (of more than 1,000 entrants in the entire competition). Australian beef and lamb was used to complete a series of practical and display-based challenges. MLA's Chef Tarek took a leading role on the judging panel.

2 SWITZERLAND

A well-flavoured reception

The Australian Embassy in Geneva and MLA teamed up for a function to celebrate Australian Indigenous culture and innovation. Almost 500 guests sampled six Australian beef and lamb dishes. Four food stations reflecting Australian outback settings were positioned on pathways through Aboriginal art displays. Attendees included ambassadors, members of the European Parliament, World Trade Organization dignitaries and Australia's Minister for International Development and the Pacific, Senator Concetta Fierravanti-Wells. The event assisted with building relationships within the World Trade Organization community.

3 EUROPE

Flying the flag

Australia Day was celebrated with Australian beef and lamb by 900 guests attending embassy functions in London, Berlin and Malta. Government representatives, business people and diplomats attended the celebrations, which were supported by MLA, and heard speeches from Australian ambassadors, who talked about the premium attributes of Australian red meat. Guests enjoyed dishes such as Australian beef carpaccio, brisket rolls and lamb skewers.

4 SOUTH-EAST ASIA

Paddock-to-plate courses

Fifty-five red meat importers and retailers improved their knowledge on the paddock-to-plate journey of Australian beef and lamb via five-day courses run by MLA and South Australia TAFE in Singapore and Kuala Lumpur.

Importers learned about the supply chain and specifications, while retailers focused on hygiene, cutting techniques and utilisation.

5 JAPAN

Burger breakthrough

Following two years of relationship building by MLA's Japan office, McDonald's Japan has introduced three new 'Grand' burgers, featuring Australian beef.

Support from MLA included a new product demonstration by MLA's chef Sam Burke in the McDonald's test kitchen last year.

The result is McDonald's Japan replacing the Quarter Pounder with the new burgers, which feature larger patties than a Big Mac.

McDonald's is using the 'True Aussie Beef' logo on 14 million tray mats and 30 million promotional flyers for distribution in April and May. A television advertisement also tells consumers the beef is sourced from Australia and New Zealand.

Sharing the story

More than 80,000 visitors attended Japan's Supermarket Trade Show, where MLA partnered with 11 exporters of Australian beef and lamb to showcase their products. There were 450 exhibitors at the show.

MLA also hosted seminars this year in Fukuoka, Osaka and Tokyo to provide updates on Australian supplies and marketing initiatives. They were attended by more than 500 people representing importers, foodservice and retailers.

6 CHINA

Taste tempters

More than 140 guests, including media, key influencers, retail customers and restaurateurs, enjoyed a premium Australian food experience when MLA's China office collaborated with the Australian dairy, wine and horticultural industries to host Taste Australia. Held in Shanghai, the event showcased Australia's best produce and included talks from leading food experts.

7 NORTH AMERICA

Lamb gets a grilling

Almost 70,000 Americans entered a competition for a chance to win a chef dinner for eight in the one-month Texas de Brazil-True Aussie lamb promotion in February.

Texas de Brazil is a global Brazilian-American steakhouse chain and, after the success of a similar campaign in 2014, partnered again with True Aussie lamb this year to roll out a 'Get Grilled on Australian Lamb' promotion in its restaurants in 18 US states. The restaurant offers lamb legs and chops on its barbecue meat menu.

Supported by marketing explaining the qualities of Australian lamb on Facebook and via the Texas de Brazil e-newsletter, consumers answered questions to be in the running for gift packs and the dinner prize.

The campaign attracted 120,000 unique online views.

On the ground

North America

Rob Williams
MLA International Business Manager
North America
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After working for the red meat processing sector with both the Australian Meat Industry Council and the Australian Meat Processor Corporation, I've recently taken up the reins as MLA's International Business Manager in North America. Aside from settling into a new country, I've been busy assessing whether new policies from the Trump Administration will impact Australian red meat

In these uncertain times of the new US Administration it is important that our red meat industry does not second guess or speculate too much. It is difficult to read the political climate, even for seasoned analysts. We need to keep doing what we do best, and that is providing premium chilled beef and lamb into a market where we have carved out important niches.

MLA recently held eight culinary immersion events, involving 112 chefs representing more than 8,000 restaurants. At these events, chefs were shown how to use Australian beef and lamb in new and exciting dishes. Nearly half of the chefs responded to a follow-up survey which found:

→ more than 95% of respondents trialled Australian product on their menus

→ 58% put Australian product on their menus permanently.

MLA also held the 'Wagyu Chef's Roll' event in Las Vegas. We had three exporters/suppliers providing product to three key chefs who prepared Australian Wagyu for more than 60 people.

We continue to keep tabs on our competitors. More exporting countries are entering or are about to enter the US market, including Brazil, France and possibly soon Argentina. The emergence of beef from Brazil and Argentina in particular represents a major challenge for Australian beef.

The shortfall created by Australia's tight supply of beef has partly been filled by our major market competitors: Canada, Mexico, Uruguay and New Zealand.

MLA is closely watching the Republican proposal for a border adjustment tax (currently proposed at 20%) to be applied to all imports from all countries. It has been colloquially named as the 'made in America' tax plan, and also incorporates tax incentives for exports. If approved, this tax would be applied to imports of red meat.

Growing demand

Getting to know our consumers

With 75% of Australian beef and 55% of lamb production destined for export markets, it is critical that producers, exporters and marketers understand what proteins are being bought by overseas consumers and why.

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MLA's annual Global Consumer Tracker research measures consumer awareness, consumption and attitudes towards Australian beef and lamb, compared to our key competitors, in a range of developing and developed markets.

MLA's Global Strategy, Insights and Nutrition Group Manager Natalie Isaac said the information gathered was used to inform MLA's global marketing strategy, facilitate targeted marketing campaigns and ensure product was placed in the most appropriate markets.

"By understanding the attributes consumers seek when purchasing Australian red meat, we can leverage those strengths in our communications and placement of product," Natalie said.

The consumer tracking research has been conducted annually since 2013 and last year expanded its geographic focus to six extra markets.

"In 2016, we surveyed consumers in South Korea, Indonesia, Malaysia, China, Taiwan, the United States, Saudi Arabia, United Arab Emirates, Japan, Australia, Vietnam, The Philippines, Canada, Oman, Singapore and Thailand," Natalie said.

"We also included new questions regarding where consumers shop for their imported beef and lamb, and what they look for, and whether they are aware of meat's country of origin when purchasing."

Some key insights by region are included below:

Australia

In Australia, beef's key strengths are that it: *'is the most superior meat'*; *'is an essential part of a healthy diet for growing children'*, and *'can be used in many different meals'*. While price is perceived to be a challenge for beef, this perception is not so great for lamb. Lamb is a red meat consumers *'are willing to pay more for'* and the fact it *'tastes delicious'* is a key strength.

North America

In the US there remains a large proportion of consumers who have not bought lamb, stating their main reasons as *'unfamiliarity'* and *'unsure how to cook'*, presenting a growing opportunity.

Nearly 70% of US consumers surveyed claimed to have previously bought grassfed beef and cited quality, 'naturally' raised, and animal welfare as key considerations. Grassfed beef is also perceived as *'better for my health'*.

Japan

When purchasing proteins in Japan, it is important the meat *'can be used for different meals'*, *'is the most superior'* and *'is the family's favourite'*.

Consumers think beef *'tastes delicious'* and *'is worth paying more for'*, but they also see it as comparatively expensive and perhaps not as versatile as other proteins.

Taking a snapshot

Beef and sheepmeat producers now have access to information on all major red meat export markets, the domestic market and two competitor markets in MLA's updated *Market Snapshots*.

The snapshots give producers, exporters and other value chain partners a better understanding of what's driving demand in the main markets where Australian beef and sheepmeat are consumed.

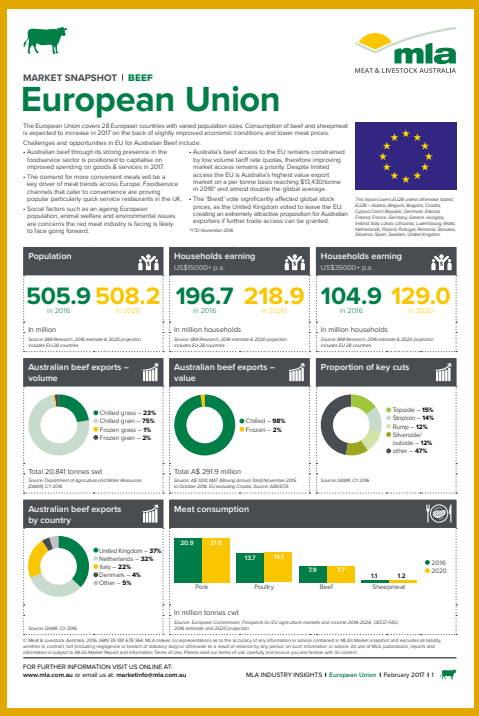
Each snapshot includes information about the market's population, food and eating trends, imported consumption, foodservice use and the trade access situation.

The snapshots will be updated regularly and are collated using market data, research reports and insights from MLA's network of international offices.

Supplier snapshots are also available on India and Brazil, two of Australia's beef market competitors.

To download or read the snapshots go to: **www.mla.com.au/market-snapshots**

Here's an example of two of the snapshots:



Korea

Pork is the most consumed meat in Korea, underpinned by versatility, convenience and affordability. Consumers have positive views towards beef, associating it with nutrition, taste and superior quality.

Australian beef is consumers' favourite imported beef and is considered trusted, affordable and natural. It is important for Korean consumers to know the origin of beef they consume, providing Australian beef with positioning and messaging opportunities.

China

While pork and chicken appeal for low price, versatility and convenience, lamb is perceived to be *'a superior protein'* of *'high nutritional value'*.

Consumers consider beef *'a premium protein'* and the top perceptions of beef versus other proteins are its *'family appeal'*, *'being superior'*, a *'willingness to pay more for'*, and progressively *'becoming more popular'*, along with its *'high nutritional value'*.

Middle East/North Africa

Australian beef has a high profile in Oman, the United Arab Emirates (UAE) and Saudi Arabia with 'top of mind awareness' particularly strong across all three markets.

In-store display and word of mouth/referral have a significant influence when buying beef or lamb in Saudi Arabia, whereas in UAE, TV cooking shows and celebrity endorsements have the greatest influence.

Fostering the consultants of the future

Nine young people throughout Australia are on their way to becoming the red meat industry's next generation of livestock consultants, two years after starting as interns in the inaugural Future Livestock Consulting Internship (FLC) program.

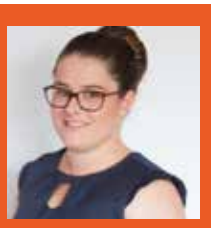
Supported by MLA Donor Company (MDC), the FLC program is designed to ensure the continuation of new consultants to the industry through a structured program that underpins the cost of livestock consulting businesses taking on entry level employees.

Interns from round one will graduate in June, having completed a two-year program with participating consulting firms including Brennan Mayne Agribusiness, Outcross, Agripath, Sheepmatters, Sally Martin Consulting, Moses & Son, Meridian Agriculture, RMCG and PlanFarm.

The success of this first round has prompted MDC to commit to support round two for which livestock consultancy businesses and interns are actively being sought.

Lexi Cesnik, 25, Sally Martin Consulting and Moses & Son, NSW, and Emma Egan, 22, RMCG, Tasmania, share their round one intern experiences with *Feedback*.

Emma Egan: "A foot in the door."



Emma moved from Gippsland, Victoria, to Penguin in North West Tasmania to take up a Future Livestock Consulting Internship with consulting business, RMCG.

What was your background before starting your internship?
I was working in Alberta, Canada on a beef property when I applied for the internship. Prior to that, I had graduated from an Advanced Diploma of Agriculture and a Diploma of Agronomy at Longerenong Agricultural College, and had started a Bachelor of Agricultural Business Management with Charles Sturt University.

What has your internship involved?
RMCG is a diverse business with a wide range of consultants across not only agriculture, but also water management, environment and economics. My internship has involved working on MLA-funded projects, running workshops and field days, as well as providing advice in data management and livestock nutrition. In contrast to this, I've also been engaged with waste water audits and bushfire loss assessments.

What's the next step in your career?
I've recently accepted the offer to continue with RMCG as a project officer.

Lexi Cesnik: "Identifying a future direction."

When Lexi Cesnik graduated with a Bachelor of Education from Charles Sturt University she was concerned that opportunities to work in the livestock industry were limited to the traditional stock and station agency. FLC has provided her with the chance to work with producers to meet production goals.

What prompted you to apply for the internship program?
When I found out about the FLC program, it seemed too good to be true. I knew I wanted to work in research and project management, rather than in a role with a sales focus, and I wanted to work with producers on production goals. The FLC program has really allowed me to find my niche in life - I feel very privileged and lucky.

What has your internship involved?
My role with Sally Martin Consulting has been as project officer for a supplement trial that Sally was running. That involved liaising with potential producers and supplement suppliers and ongoing data collection. A lot of my work has been on-farm data collection and then data analysis back to the producer.

With Moses & Son, my role has involved writing their business plan, which has been ongoing, and helping with marketing.

It has also involved extension work, so if there's a field day coming up, I help organise it and also present information to producers.

In both roles, I spend most days dealing with producers, whether it be at a workshop, out onfarm or talking to them about data we've collected.

What have been your key learning experiences during the internship?
Before I started the internship, I hadn't had a lot to do with electronic identification systems (eID). I've now had the opportunity to learn all about eID - from electronic fleece weighing through to body weighing and muscle scanning. Sally is involved in sire evaluation programs and productivity trials, so I've helped with electronic data capture, data analysis and manipulating that data to present a producer with the information they need.

I'd never written a business plan before either, so it was new territory for me as well. I'm grateful that Moses & Son's managing director, Marty Moses, gave me the opportunity.

I've had to present information at workshops. Standing up in front of a crowd and supplying them with information and answering questions is probably one of the other great experiences I've had.

Is it challenging for young people to get a start in a career in agriculture today?
I'm part of a project looking at pathways for young people into all agricultural industries, not just livestock. A survey found 60% of the cotton industry hire private consultants to help them, other than their agronomist. However, only about 10-15% of livestock producers hire a consultant. I think that's because, until very recently, the industry relied on government departments to supply this information for free.

What's the next step in your career?
I will be full-time with Moses & Son as their livestock consultant once the internship finishes and I'll continue to collaborate with Sally and she'll still be my mentor.

Keen to be involved in FLC? Employers and potential interns interested in joining the program can contact Program Manager, Ben Reeve, from Meridian Agriculture // T: 0416 127 465 // E:BReeve@meridian-ag.com.au

Brisbane//2017 Global Markets Forum

The outlook for Australian beef in key markets was shared with more than 200 producers and industry stakeholders in Brisbane in March by MLA's team of International Business Managers and market experts.

The Brisbane Global Markets Forum had a specific focus on beef, following an earlier Melbourne forum where the sheepmeat sector was the focus.

Attendees heard about opportunities, challenges, marketing programs and activities, and trade negotiations underway in existing and emerging markets.

Couldn't make it? Watch videos of key speakers at the event at: **www.mla.com.au/globalmarketsforum**

Subscribe to MLA's *Global markets update* e-newsletter **www.mla.com.au/enews**

MLA Industry Marketing Programs Manager Samantha Jamieson (right) with a forum attendee.

Forum attendees Charlie Elliott and Tom Richie.

MLA International Business Manager North America Rob Williams addresses the forum.

MLA International Business Manager Southern Asia Andrew Simpson with Don Mackay, chairman of the Red Meat Advisory Council.

MLA General Manager International Business Michael Finucan addresses the Brisbane forum.

Peter Rizzo, CEO of the Australian Meat Processor Corporation with Simon Stahl, CEO of the Northern Cooperative Meat Company.

Upcoming events

Find more events and information at **www.mla.com.au/events**

Red Meat Updates

Now in its fifth year, this year's Red Meat Updates focus on building business resilience and will feature a great line-up of guest speakers, workshops and panel discussions.

When and where:
28 July, Launceston Tasmania

More information:
www.redmeatupdates.com

BeefUp Days

MLA's BeefUp Days give producers the opportunity to learn the latest from levy-funded research and development.

When and where:
25 May, Katherine, NT
14 June, Hughenden, Queensland
27 June, Tom Price, WA
29 June, Fitzroy Crossing, WA
4 July, Warwick, Queensland
12 July, Barcaldine, Queensland

More information:
Barbara Bishop
E: barbara@barbarabishop.com.au

BusinessEDGE

BusinessEDGE is a comprehensive two-day workshop designed to improve the financial know-how and business skills of owners and managers of grazing enterprises.

When and where:
13–14 June, Mackay, Queensland
20–21 June, Darwin, NT

More information:
Ian Mclean T: 0401 118 191
E: ian@babusiness.com.au

Having a ball

Here are two takes on the humble meatball. Each recipe works well with beef or lamb mince.

Meatballs and zucchini noodles (zoodles)

500g lean beef mince

1 small brown onion, finely diced

¼ cup basil leaves, finely chopped plus extra small leaves, to serve

1 tbsp olive oil

400g quality Napolitana pasta sauce

3 medium zucchini, spiralised into zoodles

¼ cup shaved or finely grated parmesan

Baby rocket salad and lemon wedges, to serve

1. In a large bowl combine the mince, onion and chopped basil. Season and roll into heaped tablespoon-sized meatballs (makes approximately 20 balls).
2. Heat the oil over medium-high heat in a large non-stick frying pan. Cook the meatballs for six to seven minutes, browning on all sides. Add the pasta sauce and simmer for two to three minutes, or until slightly reduced and heated through.
3. Add the zoodles, and toss to coat.
4. Place meatballs and zoodles into bowls, top with parmesan and basil leaves and serve with baby rocket and lemon wedges.

TIP: You will need a vegetable spiraliser for this recipe – alternatively you can use a vegetable peeler and cut the strips with a knife into 'zoodles'.

Serves 4

Harissa lamb meatballs with cabbage and pomegranate salad

600g lean lamb mince

1 tbsp harissa

2 cloves garlic, finely chopped

2 cups finely shredded white cabbage

⅓ cup pomegranate seeds

½ cup mint leaves

½ cup coriander leaves

½ cup flat-leaf parsley leaves

3 tsp white wine vinegar

Grilled flat bread and Greek yoghurt to serve

1. Mix the lamb with the harissa and garlic and season with salt and pepper. Roll into walnut-sized balls.
2. Place a large, lidded frying pan over a moderately high heat. Gently roll the meatballs with some olive oil and cook for four minutes or until nicely coloured. Place the lid on the pan, turn the heat down to moderately low and cook for a further four minutes or until cooked through.
3. Mix the cabbage, pomegranate seeds and herbs together and season with salt and pepper. Add vinegar and olive oil to taste.
4. Serve the meatballs and salad together with grilled flatbread and Greek yoghurt.

Serves 4