mla Your levies at work // September/October 2015

Feedback

Ambassador

A note from the MD...

Red meat production, exports, cattle and retail prices continue at record levels at the moment, and have contributed to the total off-farm value of the cattle, lamb and mutton industry increasing to $23.2 billion in 2014–15, 18% higher year-on-year. Although it is a spectacular result I am very mindful of the ongoing challenges faced by producers with continuing drought and the record sell-off of livestock that has been necessary for many producers.

I'm also conscious of keeping in touch with what's happening around the country for livestock producers and around the world when it comes to demand for our great product. Whether I'm in China, as I was during August, meeting with customers and gaining an understanding of opportunities in that market; meeting industry leaders at the Royal Melbourne Show in September; or heading to central and northern Queensland in October to meet with producers – I value the interactions I have and the time people spend letting me know how their businesses are going and how MLA can better respond to their needs.

On that note, I want to remind all members about the opportunity they have to vote at this year's MLA annual general meeting in Brisbane on 10 November. Members will be receiving their AGM voting entitlement and proxy form and notice of meeting in the mail during October. Please keep an eye out for it and I encourage you to not only vote, but also attend this year's AGM.

The legislation needed to implement the China-Australia Free Trade Agreement (ChAFTA) was introduced into Federal Parliament in mid-September. The agreement includes the following benefits for Australian red meat:

- → tariffs levied on Australian beef of 12–25% will be eliminated over the next nine years
- → sheepmeat and goatmeat tariffs of 12–23% will be eliminated over eight years
- → 12–15% tariffs on offal will be eliminated over four to nine years
- → 5–14% tariffs on hides and skins will be eliminated over four to eight years
- → 10% tariffs on live cattle and sheep will be eliminated over four years.

The parliament will vote on the Bill in coming months. If you have further questions or want to know how to get involved regarding ChAFTA please contact our peak industry councils (CCA, SCA or ALFA) or the National Farmers' Federation.

Richard Norton
MLA Managing Director

Contents

Cover: Australian born, Miami based chef and lambassador Aaron Brooks. Image courtesy Four Seasons Miami.

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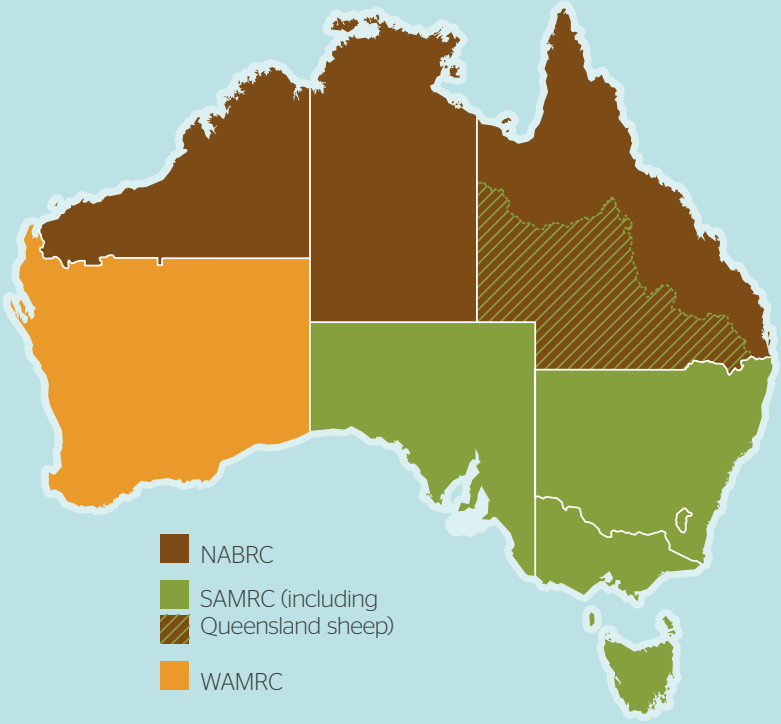
Consultation rollout



MLA's back-to-basics approach to seeking producer input into its research, development and adoption priorities has attracted strong support from producers and research organisations.

The new strategy sees the creation of independent research councils in southern and Western Australia that will allow producers to have direct input into how their levies are invested. In northern Australia, MLA will partner with the existing North Australia Beef Research Council (NABRC) to offer northern producers the same opportunity.

Seven producers from southern Australia have been selected (for contact details visit **www.mla.com.au/samrc**) to lead regional committees of the Southern Australia Meat Research Council (SAMRC). In August, SAMRC regional committees met in Sydney for their first face-to-face meeting.

NABRC regional chairs were introduced to MLA's fresh approach at the council's August meeting in Darwin, where MLA's General Manager of On-farm Innovation and Adoption, Dr Matt McDonagh, emphasised the importance of being able to tap into NABRC's history of driving research into issues affecting producers in northern Australia.

Producers in Western Australia will not miss out, with the newly appointed coordinator of the Western Australia Livestock Research Council, Erin Gorter, enthusiastic about giving the west a strong voice in the setting of national research, development and adoption priorities.

All research councils will be busy in the coming months gathering feedback and developing regional priorities to be considered and used to guide MLA research projects.

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www.mla.com.au/About-MLA/RD-Consultation

safemeat

NVD update

SAFEMEAT, the body responsible for safety and hygiene standards in Australia's red meat industry has announced that from 16 November 2015, producers will need to ensure they are using the most up-to-date version of the Livestock Production Assurance National Vendor Declaration (LPA NVD) form.

SAFEMEAT chair Ross Keane said he was confident that more than two-thirds of Australia's livestock producers are already using current LPA NVD forms but it's important all producers are ready for the November phase-out.

"With 54% of lamb, 97% of sheepmeat, 70% of beef and 95% of goatmeat being exported, the decision (to change the form) was necessary to meet domestic and importing country requirements," Ross said.

"This change means the small number of producers who are still using old forms will need to obtain the latest LPA NVD version to ensure our system consistently delivers what international customers require."

LPA NVD's are required for movements of all LPA-accredited livestock (sheep, lambs, goats and cattle) including property to property, through saleyards, direct to processors, feedlots, and to the live export trade.

From 16 November 2015 producers should only use LPA NVD's labelled 0413, and for bobby calves forms labelled 0412.

Producers can order a new hard copy LPA NVD booklet online, or purchase electronic NVDs, at:
http://lpa.ausmeat.com.au

Looking at the forecast

MLA is one of 14 partners in a new three-year research project titled "Improved Use of Seasonal Forecasting to Increase Farmer Profitability."

The aim of the project is to bridge the gap between seasonal climate forecasts and on-farm business decisions to improve productivity and profitability by:

- → identifying the critical information requirements relating to seasonal climate risks for primary industries by sector, type of decision and region
- → enabling producers to use the unrealised potential in existing seasonal climate forecasts by developing tools, information and training to help producers understand and use seasonal forecasts in business decision making
- → improving the seasonal forecasting capabilities of Australia's primary forecasting model (POAMA/ACCESS) by analysing and reducing the main errors that negatively impact the quality of seasonal predictions

The project will be managed by the Rural Industries Research and Development Corporation. The Federal Government will fund $1.8 million of the $3.5 million project, with the remainder to come from the partners.

www.rirdc.gov.au

Moving forward with the MISP

The Meat Industry Strategic Plan (MISP 2020) is a key document in setting the direction of the red meat industry.

MISP 2020 is created in conjunction with industry; including producers, processors, exporters and service providers such as MLA, Livecorp and Australian Meat Processor Corporation. The core pillars of MISP 2020 are:

- → consumer and community support
- → market growth and diversification.
- → supply chain integrity and efficiency
- → productivity and profitability.

MLA Managing Director Richard Norton said the MISP provided clear guidance on priorities.

"The MISP offers a vision of where the red meat industry wants to be in the future, and, importantly, it sets out clear objectives and key performance indicators to help us get there," he said.

"MLA will work collaboratively with industry and map out how the MISP objectives can be practically achieved to benefit producers and tackle some of the bigger issues, including objective carcase measurement and value-based marketing

"I strongly believe that MLA is playing a critical role in improving the outlook and prosperity of the red meat sector, and we're up for the challenge."

MISP 2020 was launched by Minister for Agriculture Barnaby Joyce in Canberra on 9 September.

MLA's Annual Operating Plan (AOP) for 2015-16 has already been approved by industry, including the Peak Industry Councils, and can be viewed online at **www.mla.com.au**. MLA's AOP for the next four years will be based on the MISP 2020.

Strategies from market statistics

Check out MLA's new online Statistics Database, which provides producers with access to long-term price, production and consumption data, as well as information from a number of export markets.

"By accessing specific market reports, businesses can make more informed decisions – in terms of breeding, buying or selling stock or exporting product," MLA's Manager of Market Information Ben Thomas said.

"There is huge potential benefit from this data, resulting in a boost to the productivity of the Australian beef and lamb industry."

The Statistics Database is available at: **www.statistics.mla.com.au**

A new horizon for Caitlyn

Victorian veterinary science student Caitlyn Daffey has been awarded a 2015 Horizon Scholarship, supported by Meat & Livestock Australia.

The Horizon Scholarship, an initiative of Rural Industries Research and Development Corporation in partnership with industry sponsors, provides financial support during a student's undergraduate university degree, encouraging young people across Australia to pursue fields of study in agriculture.

Caitlyn said the Horizon Scholarship would help her give back to rural communities after graduation by providing support throughout her degree.

Growing up in Ballarat, Victoria, Caitlyn's love of sheep farming and horses, and a year on a Northern Territory cattle station in 2014 inspired her to pursue a career as a rural vet. She is currently studying at James Cook University.

"I believe the program will allow me to do this through financial support, but also with opportunities from mentoring and development workshops," she said.

"I intend to use the Horizon Scholarship for university expenses, such as accommodation, text books and study equipment for the duration of my course.

"On graduation I would like to find work in a remote community. I'd love to be able to assist producers in improving their stock yield and overcome welfare and disease issues."

www.rirdc.gov.au/research-programs/rural-people-issues/horizon-scholarship

Strengthening live export assurance

Since July 2011, the livestock export industry has operated under the Australian Government's Exporter Supply Chain Assurance System (ESCAS). Now a new, more robust assurance system is being trialled.

A research and development project, being undertaken by MLA and LiveCorp, aims to develop a more robust assurance system that will strengthen the principles of ESCAS, better ensure the welfare of exported animals and demonstrate the professionalism of the trade while protecting the long-term sustainability of the entire industry.

The Livestock Global Assurance Program (LGAP) is currently in development and is due to be piloted in Malaysia (for goats), Indonesia (cattle) and the Middle East (sheep) in coming months.

Under ESCAS, regulatory requirements are only able to be placed on Australian exporters – not overseas facilities.

As a non-regulatory program, LGAP will be able to place requirements and consequences on in-market importers, auditors, feedlots and abattoirs, not just exporters.

In-market facilities would be more immediately accountable for their activities under LGAP, without the responsibility currently borne by exporters under ESCAS, being diluted.

Australian exporters would continue to be subject to Australian Government export regulations, with LGAP being a means for them to more effectively demonstrate and ensure true compliance with the principles of ESCAS.

Adherence to the program's requirements would be verified through internal and external audits. External auditing would be undertaken by independent organisations with no financial relationship between them and the entity being audited.

The consequences of non-conformance under LGAP would vary depending on the breach, but a major or critical non-conformity may result in the certification of a facility being suspended or withdrawn.

The proposed structure of LGAP aims to do more for improving the welfare of all animals in foreign markets, as it is not limited to just Australian livestock. The program will encourage developing markets to improve animal welfare practices by offering different levels of requirements and a pathway to improvement.

The development of LGAP is being guided by a consultative committee comprising livestock exporters and representatives from the Australian Department of Agriculture, the Australian Veterinary Association, MLA, LiveCorp and the Australian Livestock Exporters' Council. Significant consultation has also been occurring with exporters and in-market stakeholders, as well as producer representatives.

The development project is funded under the Livestock Export Program, with funding split by MLA (25%), LiveCorp (25%) and the Australian Government (50%).

Research outcomes will be provided to the livestock export industry in March 2016, after which the industry will consider the feasibility of implementation.

Comparison of ESCAS and LGAP

FEATURES:	ESCAS Exporter Supply Chain Assurance System	LGAP Livestock Global Assurance Program
Ensures that Australian livestock exported for feeder and slaughter purposes are handled in accordance with the (OIE) Terrestrial Animal Health Code.	✔	✔
Facilitates trade and prevents the occurrence of a total trade suspension.	✔	✔
Provides a mechanism to deal with animal welfare issues.	✔	✔
Provides impetus to improve infrastructure and training in export market facilities.	✔	✔
Requires animal traceability throughout the supply chain.	✔	✔
Requires exporters to ensure the welfare, traceability and control of livestock from their arrival in the importing country until they are slaughtered.	✔	✔
Able to place requirements on all participating facilities and operators in the supply chain, making them individually accountable for animal welfare and management.		✔
Developed based on international guidelines and precedence, including those from ISO and WTO.		✔
Enables individually certified facilities to become the links in an Australian exporter's supply chain.		✔
Independent of direct changes in government in both Australia and elsewhere.		✔
Provides a definitive process for managing nonconformities within a short timeframe.		✔
Greater and more timely visibility into conformance aids early detection of possible breaches.		✔
Capacity to include Australian and non-Australian livestock.		✔
Places strict requirements on auditors to ensure appropriate levels of competency and conduct.		✔
Provides a mechanism to ensure conformance during inter-audit gap.		✔
Facility certification status can be shared between supply chains thereby eliminating audit duplication and cost.		✔
Demonstration of conformance can be scaled to suit any sized facility.		✔

www.livestockglobalassurance.org
Check out the webinar and the frequently asked questions section for detailed information.

Value chain

Driving industry innovation without levies

In the past 16 years, the MLA Donor Company (MDC) has invested more than $200 million in research and development (R&D) projects for the benefit of the beef and lamb industry.

Dr Christine Pitt.

This level of investment in innovation within the industry has delivered a range of new technologies and ideas that otherwise would not have been possible.

MLA General Manager Value Chain Innovation Dr Christine Pitt (pictured top right) said the funds invested came from a range of industry partners, including breed societies, pastoral companies, processors, value-adders, technology providers and international collaborators, and were co-invested with matching Commonwealth funds.

"No producer levies are used in Donor Company projects; instead, the MDC attracts investment from commercial partners," Christine said.

"This system allows us to fully access the matching funds allocated by the Commonwealth and so greatly increase the amount of money invested in red meat innovation."

MLA has access to matching Commonwealth funds for the purpose of R&D investment, but can only match two kinds of dollars:

- → money that comes via a levy designated for research purposes
- → money that comes as voluntary contributions via a donor company.

"Each year there is a certain amount of matching funds available to MLA – usually from about $49 million to $54 million," Christine said.

"Once we've allocated matching dollars to all the levy funds, there is still money left over.

"The Donor Company enables us to access those left-over funds. It's a 'use it or lose it' system – if we didn't have the MDC, the excess funding would go back into the Commonwealth's consolidated revenue and our industry would lose the opportunity to develop innovations that deliver significant benefit to our levy payers and industry stakeholders."

Fostering a spirit of collaboration

According to Christine, a great benefit of MDC partnerships is increased collaboration within the industry and faster adoption of innovation.

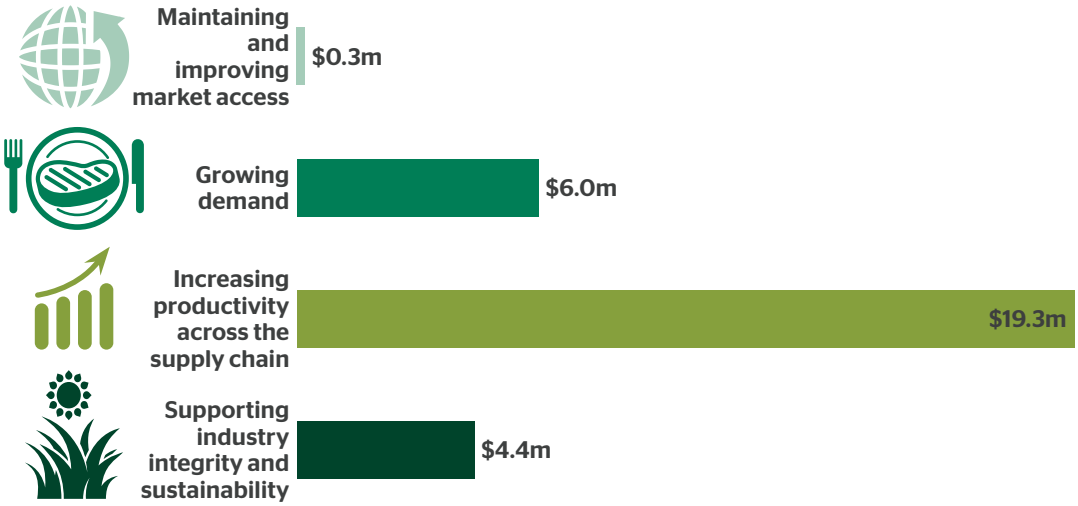
"An example is the automated lamb boning project we began in the mid-2000s," Christine said. (See breakout story on page 7).

"We sought input from a number of sheepmeat processors who came together as a steering group. We then brought in automation technology providers and they formed a collaborative network to develop strategies and prototypes.

"The first prototype has been trialled in one processor's plant, but the whole group had input. Even now, that spirit of collaboration is continuing, and the processors who have adopted the technology in their plants are willing to show it to other processors.

"Australia now leads the world in red meat processing automation, with the new technology delivering value and efficiency for the processors, with benefits flowing back to producers."

Figure 1 MLA Donor Company investment in 2014–15



Total investment $30 million – includes voluntary contributions from investment partners and matched R&D funding from the Australian Government. No MLA producer levies were invested.

Table 1 MLA and MLA Donor Company comparisons

Company	Owner	Funding sources		
		Producer levies	Government contributions (for R&D projects)	Voluntary contributions from partner investors
MLA	Producers	✔	✔	✘
MLA Donor Company	MLA	✘	✔	✔

Christine said an exciting development emerging from the automation program was the ability to objectively measure a range of carcase attributes. (See case studies on page 7).

"This new capability will underpin greater exchange of information along the chain and will become the basis of whole new business models and payment systems," she said.

Long-term partnerships

While anyone can be an MDC partner (providing they only invest non-Commonwealth funds) and one-off project suggestions are welcome, Christine said the donor company generally sought to encourage long-term partnerships, as this encouraged a more strategic approach that was more likely to involve multiple projects.

One example is the Beef Information Nucleus (BIN) (see story page 25) , which is a portfolio of projects established through the donor company and funded by major breed societies to further develop genetic technologies.

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For information on how to partner with the MDC:

Go to: **www.mla.com.au/Research-and-development/Funding-opportunities/Industry-researchers**

Contact MDC manager **Skye Richmond** on 02 9463 9213.

MDC investment snapshots

MLA Donor Company (MDC) partnerships have delivered a range of benefits to the red meat industry, including:

- → improved on-farm and off-farm sustainability
- → reduced production costs leading to a more competitive industry
- → higher standards of occupational health and safety
- → value-added products that have facilitated access to new international markets and increased export earnings
- → enhanced supply chain collaboration
- → increased innovation capability.

Here are three case study examples of MDC investments.

Case study: Automated processing technology

Challenge: To develop fully automated and semi-automated carcase cutting equipment which:

- → adds value to lamb slaughter and dressing
- → improves meat yield
- → increases processing efficiencies
- → delivers operator safety.

Partners: MDC, technology providers, processors

Outcomes:

1. Scott Technology's X-ray guided automated lamb cutting system, LEAP™

This equipment uses X-ray to find specific bones and cut between them. The precise cutting lines increase value of product by not leaving higher-value meat on a lesser-value cut.

There are two systems:

LEAP III - lamb primal system: separates carcases into shoulder, middle and hindquarters. Increases carcase value by $1.30-$1.40/head.

LEAP IV - middle system: breaks the rack barrel into various sub-primal components. Increases carcase value by $3.20-$4.20/head.

LEAP III and LEAP IV are operating in two Australian processors (JBS and Australian Lamb Company). These multi-million dollar investments typically have less than 12 month payback.

Information: www.scott.co.nz/meat-processing/lamb/lamb-processing

2. Machinery Automation Robotics' ovine brisket cutter

This system identifies the navel end of the breast bone and a circular saw cuts the breast bone down the centre of the carcase.

The cutter can deliver savings through:

- → decreased labour requirements
- → reduced workplace injury
- → improved yield and food safety.

A cost/benefit analysis estimates a net benefit of up to 5c/head.

The Robotic Brisket Cutter is commercially available for $150,000/unit.

Value chain benefits: Automated systems give processors the ability to increase product value, improve yield and reduce labour costs, which enable abattoirs to purchase and process more stock, benefiting producers. Economic modelling has revealed that producers capture 24% of the benefit from any increase in productivity by processors.

Information: www.machineryautomation.com.au

Watch the brisket cutter in action at: **www.youtube.com/watch?v=9jG0exUc0jE**

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LEAP III and IV lamb processing automation.

The ovine brisket cutter.

Value chain

→

Case study: Pain relief for cattle and sheep

Challenge: To improve on-farm animal welfare by developing a safe and effective pain relief method, which has manageable withholding periods, for use during animal husbandry procedures in cattle and sheep.

Partners: MDC, Troy Laboratories, CSIRO and industry partners

Outcomes: This $1 million partnership developed a new way to administer the rapidly absorbed non-steroidal anti-inflammatory drug (NSAID) meloxicam, which was originally developed as an injectable for cattle.

Troy Laboratories developed a gel formulation of the drug, ILIUM®Buccalgesic OTM, which can be orally administered to both sheep and cattle.

Following treatment with the drug it takes six or more minutes for effective blood levels to occur, so ideally the drug should be given before the painful procedure.

The hook-nozzle dosing gun has been designed for ease of use and the gel is bright blue so it's easy to see if an animal has been treated. It can be given while the animals are in the race, so the medication is kicking in at the time of operation.

ILIUM®Buccalgesic OTM can be purchased through a veterinarian and costs about $1/calf. The sheep product is due for release this year and will cost about 35–45 cents/lamb.

Value chain benefits: Meloxicam was previously only available in the form of an injection, which presented operator safety, carcase quality and animal welfare issues.

Information: Jim Rothwell, MLA
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Case study: Developing new red meat products

Challenge: The face of the food industry is rapidly changing. Impacts are being felt as a result of:

→ increasing globalisation
→ an ageing population
→ a move away from traditional meals eaten in the home
→ the growth of the foodservice sector, including conference and convention catering, airlines and retirement facilities
→ economic growth and the westernisation of China and South-East Asia
→ advancements in technologies.

This suite of MDC projects has sought to grow red meat demand by investing in the creation of products for developing markets, new meat processing technologies, developing capability within the industry (by educating butchers, foodservice and processing partners) and researching the forces impacting the market.

Partners: MDC, Australian Meat Processing Corporation (AMPC), industry and technology partners

Outcomes:

1. High pressure processing (HPP): This process uses pressure and water to surround the sealed meat product to significantly extend shelf life without the need to freeze or add preservatives. When pressure is also used in combination with high temperature HPP can produce tender meat and is ideal for secondary cuts with similar quality to sous vide/slow-cooked dishes, but in 15 minutes rather than six hours.

2. High moisture extrusion cooked: This process uses extrusion to 'create' a meat product with great texture and fibres made from lean trimmings. It's ideal for pizza toppings, sandwiches and rolls and a range of foodservice uses, and may deliver value chain benefits of up to $10/beef and $1/lamb carcase.

3. Commercial partnerships: MLA has supported the development of products for particular markets including sizzle steak (using Thin Slice Technology), sausages (fast-chilled NuMeat technology), sous vide-cooked rib fillet (SmartShape™ technology), pulled meats (cooking/shredding processes) and a range of meat-based toddler and baby food products.

Value chain benefits: Greater use of secondary cuts and increased value of these cuts, and the development of new markets for Australian red meat .

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See beef and goat innovations come to life at **www.youtube.com.au/meatandlivestock** (scroll to 'MLA Red Meat Innovation')

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mla donor COMPANY

Orally administered pain relief for sheep.

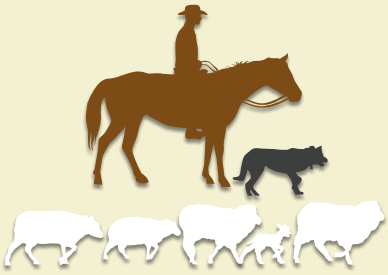
High pressure processing in action.

Meat from high pressure processing.

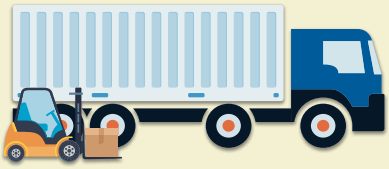
Value chain

From Australia's west to Asia's east

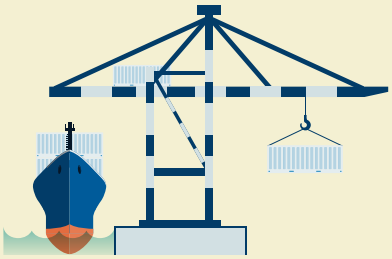
A memorandum of understanding was signed mid-2015 by MLA, V&V Walsh, the Department of Agriculture and Fisheries WA (DAFWA) and Heilongjiang Grand Farm Group which will see:



500,000 lambs needed each year to supply China's Grand Farm, the largest sheepmeat and third largest beef importer into China.



To be processed by WA's largest processor V&V Walsh.



To be transported frozen to Grand Farm's new processing facilities in Xilinhot, Inner Mongolia.

To be sold in Grand Farm's retail outlets to Chinese consumers.

A smorgasbord of learnings

A recent trip to China served up more than hot pot for Neville McDonald. The China Insight Tour in July, facilitated by DAFWA and MLA, not only gave Neville, seven other sheep producers and industry representatives an insight into the supply chain and market requirements, but saw an MOU signed to supply an additional 500,000 lambs a year into Grand Farms' Chinese distribution channels.

Neville runs a 70% cropping, 30% sheep enterprise on 12,000ha at Beaumont, east of Esperance, Western Australia, with his parents and brothers. They run 4,000 ewes and operate a lamb feedlot which annually turns out 25,000 head, mainly direct to Bunbury processor V&V Walsh.

Neville shared with *Feedback* his lessons from the China Insight Tour:

1. **Different markets demand different products:** Neville was surprised to see sheep kidneys priced higher than loin chops in Chinese supermarkets. Other secondary cuts, such as necks, flaps and briskets are also popular with Chinese consumers, creating an opportunity to value-add Australian lamb.
2. **Australia's high safety and integrity status is invaluable:** Meat managers in Grand Farm retail outlets reinforced the importance of Australia's environmental and food safety credentials. Neville said the message was to embrace quality assurance and traceability systems.
3. **There are gaps in integrity:** The lack of market access for chilled Australian sheepmeat undermines the true value of our products. Frozen product is defrosted and processed in China, and although some companies such as Grand Farms do identify Australian product, not all companies do.
4. **Supply chain relationships are important:** Neville said good relationships with his stock agent and processor are integral to his business. He said two-way feedback is important to position processors and producers to take advantage of new marketing opportunities.
5. **Demand is huge:** There are between 360–520 million Chinese middle class consumers who want safe and healthy protein. Although Neville came home with the 'gut feel' that China's hunger for Australian lamb won't slow, he will take cautious approach in his own business with a slow increase in ewe numbers and a feedlot expansion on the cards. He said supplying lamb to China in spring, when there is a gap in their domestic production, could present a price benefit for Australian producers.

Neville McDonald in China.

MLA will use the V&V Walsh and Grand Farm supply chain model to develop other projects, which aim to sustainably increase lamb production and improve supply chain efficiencies and returns to producers. It is part of MLA's involvement, through the MLA Donor Company (which doesn't use producer levies), to co-invest in a number of targeted, strategically aligned programs within the $300 million DAFWA Royalties for Regions program to secure the profitability and sustainability of WA's food and agriculture sector.

www.mla.com.au/Marketing-beef-and-lamb/International-markets

Disease review to influence investment

With the completion of the first cost-of-disease review in almost a decade, Australia's livestock industries have a much clearer direction of where research, development and adoption dollars should be spent.

MLA's animal health, welfare and biosecurity project manager, Dr Johann Schröder, said the MLA-funded analysis unveiled some significant changes in the effects of cattle, sheep and goat diseases on industry.

"This is potentially a very powerful document that shows some sizeable shifts in which diseases are affecting us most," he said.

"For example, in cattle, bovine viral diarrhoea virus – also known as pestivirus – has gone from nowhere in the previous review to number two on the list."

Johann said that for the first time the review measured the impact of diseases that usually only became evident during processing.

"The negative effects on industry of illnesses such as arthritis, liver fluke and sheep measles weren't quantified in the previous report," he said.

"This is where the new MLA-developed Livestock Data Link, which will provide carcase feedback and trouble-shooting advice, will be able to put useful information into the hands of producers to address these problems."

Internal parasites were the biggest issue for the goat industry, with pulpy kidney coming in second.

Johann said he expected the review to influence industry research and development priorities for at least the next decade.

Table 1 **Top five cattle diseases (total cost to northern and southern herds)**

Disease	Annual cost
1. Cattle tick	$156 million
2. BVDV/pestivirus	$117 million
3. Buffalo fly	$98.1 million
4. Dystocia	$97.8 million
5. Neonatal calf mortality	$96.2 million

Table 2 **Top five sheep diseases**

Disease	Annual cost
1. Perinatal mortality (includes losses to dystocia)	$540.4 million
2. Internal parasites	$435.9 million
3. Dystocia	$219.6 million
4. Weaner ill thrift and mortality	$187.55 million
5. Flystrike	$173.17 million

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Download the disease report at:
www.mla.com.au/Research-and-development

Research in action

Buffalo fly

The latest buzz on buffalo fly control is that MLA-funded research may have found a biological control agent to inhibit its spread.

Buffalo fly is ranked number three on the list of endemic cattle diseases (Table 1) and the pest is steadily spreading south.

Senior Research Fellow at the University of Queensland Dr Peter James said *Wolbachia*, a maternally transmitted intracellular bacteria, is being investigated for use in controlling a range of insect pests and insect-vectored diseases.

"We are working on a project now to see if *Wolbachia* will provide area-wide control of buffalo fly and arrest its southerly spread," he said.

Peter said his team had developed two important research tools to enable these studies: a persisting colony of buffalo flies that can be reared through all life stages in a laboratory – without using live cattle – an important animal welfare outcome – and a buffalo fly cell line.

Membrane blood feeder and buffalo flies on a mating platform used in rearing.

"Availability of these tools will also help investigation of other methods of buffalo fly control in areas such as early screening and clarification of modes of action of new insecticides, resistance screening and the use of viruses and baculoviruses for biocontrol and vaccine design," he said.

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Bovine viral diarrhoea virus

For cattle producers, bovine viral diarrhoea virus (pestivirus) can seem like a bolt from the blue – its presence undetected until it causes abortions, stillbirths or deformed calves.

The cost to producers, estimated by MLA's cost-of-disease review, is $170 million a year in lost production, ranked second behind losses from cattle tick.

In an effort to contain the spread of pestivirus and limit its effects, MLA funded a project run by the University of Adelaide to identify persistently infected (PI) calves in utero.

PI calves are typically exposed to pestivirus between one and four months' gestation. They remain constantly and highly infectious during their typically shortened lives (usually less than 18 months) and properties harbouring them experience variable losses.

PIs maintain the disease cycle, continually exposing vulnerable breeders and their unborn foetuses to infection.

Research fellow Dr Sasha Lanyon has developed a serum analysis that can detect the antibody difference between a breeder carrying a PI foetus and one that isn't.

"Having the ability to detect PIs in utero means they can be calved down in isolation and the calves humanely euthanised, ensuring the rest of the herd is protected," she said.

"This is particularly useful when buying in females whose pestivirus status is unknown."

Sasha said Pestigard vaccinations were ineffective on PIs.

"The vaccine cannot cure the infection, it only helps to minimise the spread to susceptible animals," she said.

Infected herds may also exhibit higher incidences of other health conditions.

"The disease severely compromises the immune system, meaning affected herds can be impacted more often and more severely by other diseases such as calf scours, mastitis and respiratory diseases," she said.

"We also have anecdotal reports of higher incidences of, for example, ring worm in herds that have no protective measures in place."

In another MLA-funded project at the University of Adelaide, overseen by Sasha, PhD student Caitlin Evans is investigating the transmission of pestivirus from cattle to sheep, and vice versa.

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To help manage your herd's health use the More Beef from Pastures Herd Health and Welfare module:
www.mbfp.mla.com.au/Herd-health-and-welfare

Cows involved in pestivirus-detection research – which ones are carrying 'persistently-infected' calves?

The cow bra stops the newborn calf from suckling prior to sample collections.

A cow from the pestivirus research trial cleans her newborn, neurologically-affected calf. The calf appeared bright and normal but was unable to get up without assistance for two weeks. The calf survived but remained neurologically-affected due to a pestivirus infection in utero.

Research at work

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

In this issue

No free ride with the Reas

Robert and Donna Rea took out the MLA Genetic Improvement Award at this year's Beef Australia 2015 for their commitment to advancing the genetics of the northern cattle industry. →

Genetics

Snapshot

Robert and Donna Rea, Townsville, Qld.

Property: 10,800ha

Enterprise: Droughtmaster stud and steers for the Japan ox market

Livestock: 850 breeders

Pasture: Legumes, stylos, buffel grass, Urochloa, ponded pasture

Soil: Sandy loam to heavy, dark, black cracking soils and salt pan

Rainfall: 750mm summer dominant

'Lisgar' bulls are put through a rigorous selection process including a Bull Breeding Soundness Evaluation and semen morphology testing.

The Reas mantra – 'it's a calf or your carcase' – may sound tough, but their unerring devotion to lifting their herd's productivity has made 'Lisgar' a profitable beef business, as measured by gross margin per adult equivalent.

How do they do it? By measuring and recording everything they can, embracing genetic technologies, such as BREEDPLAN and DNA testing, and taking a hard line on underperformers.

The Reas sell up to 100 bulls annually out of the paddock, grown from a production system aimed at finishing steers for the Japan ox market, weighing 300kg dressed at 36 months of age or less.

During the past seven years, the couple has decreased the age of their steer turnoff, improving from selling their bottom 40% at 4½ years to selling 100% of their steers at three years of age.

According to Robert, the improvement comes from using BREEDPLAN.

"I wasn't a believer to start with but, after a while, the science started to make sense. However, I had a lot of trouble with the concepts of high and low growth," he said.

"I'd look at my mature steers and think 'they're big, what's not high growth about that?' but yet performance recording was showing them to be slow growth.

"With the help of Alan Laing (Queensland Department of Agriculture and Fisheries Senior Beef Extension Officer), it dawned on me. Not low, but slow. My cattle were taking too long to get there."

Robert said genetic-linked selection pressure based on performance data and balanced trait selection were the key to turning it around.

"It's working – the percentage of the weaner drop that is below breed average in any trait is declining significantly each year," he said.

The Reas saw genetic improvement as their only way forward to improve their profitability.

"Our pastures were as developed as they could be, with buffel, legumes, stylos and Urochloa and ponded pasture, so genetics was the only area where we could make further significant improvements," Robert said.

Morphology testing

All bulls undergo a full Bull Breeding Soundness Evaluation (BBSE), including sperm morphology, at 600 days.

"This is an early-in-life test to find our most fertile bulls," Robert said.

"Our pass mark is 70% normal sperm, but those that fail are re-tested again in 60 to 70 days. Bulls still under 70% are culled."

According to the Beef CRC and other research, bulls with a higher percentage of normal sperm are expected to sire more fertile daughters.

The Reas record weights, scrotal size and carcase traits with the data submitted to BREEDPLAN to create Estimated Breeding Values. Bulls are offered with the additional information on the dams' age at first calf and intercalving intervals.

→

Genetics

Queensland Department of Agriculture and Fisheries Senior Beef Extension Officer Alan Laing and Robert Rea prepare for a data collection session.

Pressure pays off

Selection pressure on females by the Reas is relentless, but rewarding, with more than 60% of females pregnant in the first 42–45 days.

"That's a good result, considering our environment, and that we're often asking them to fall pregnant again before the season breaks," Robert said.

All females are control mated from mid-January, with maiden heifers joined for 70 days while mature cows are given 90 to 100 days. Non-productive cows are culled.

"If they're empty at pregnancy testing, no job. If there's no calf at branding, no job. It's a calf or your carcase," Robert said.

The Reas' hard line is improving reproductive performance. Calving intervals are tightening, producing more even lines, and re-breed rates are improving.

Ultimate bull

The Reas' ultimate Droughtmaster bull is quiet with a good balance of growth, fertility (including scrotal size) and carcase traits, good semen morphology and is polled.

"We've been selecting for polls since the 1960s, and about 94% of our calves at branding are polled," Robert said.

"When outsourcing genetics, we generally source polled animals – it's an animal welfare issue and it's what our clients want."

All calves are DNA-tested for sire verification so that bull productivity in multi-sire mating situations can measured.

"If a bull isn't siring many calves, he's culled," Robert said.

Nutrition boost

Alan Laing has provided nutritional guidance. He and Robert design a protein meal each year, with phosphorus and urea mixed with molasses, to suit the seasonal conditions and current availability and product prices.

"We start calving around the middle to end of October, and they get their first lick in September. We feed that through until we get a break in the season," Robert said.

"We feed it at a rate of two litres/cow/day and it keeps the cows up in condition enough to re-breed."

Disease control

Disease prevention is tackled head-on with all bulls vaccinated for vibriosis, three day sickness, leptospirosis and pestivirus.

Pregnant breeders are vaccinated at pregnancy testing for leptospirosis, botulism and pestivirus.

The entire herd, tested for pestivirus several years ago and found to be naïve, is vaccinated annually to allow opportunistic trading without compromising the herd's health.

Making progress

With Alan's help, the Reas are taking part in the Next Gen Beef Breeding Strategies project, led by the Queensland Alliance for Agriculture and Food Innovation. They are also participating in the MLA-funded Enabling Genetic Improvement of Reproduction in Tropical Beef Cattle project.

"The MLA-AGBU (Australian Genetics and Breeding Unit) project is specifically focused on recording and genotyping key industry sires to rapidly increase the number of bulls in northern Australia with accurate reproduction EBVs," Robert said.

"We are also using the new trait information generated from the Next Gen project in the MateSel Breeding Optimisation Program to help us make better breeding decisions."

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Animal health

Bovine anaemia

What is BATOG? Bovine anaemia caused by the *Theileria orientalis* group (BATOG) is a potentially fatal disease caused by tick-transmitted blood parasites that destroy red blood cells.

Historically, *T. orientalis* (*buffeli*) was considered a benign parasite that had done little harm in Australia since the early 1900s. However, more pathogenic strains of the parasites have been recognised worldwide and, since 2006, there have been large outbreaks of clinical disease in all states except Tasmania.

MLA-funded research, led by researchers at the Elizabeth Macarthur Agricultural Institute, has identified two more genotypes of *Theileria* – Ikeda and Chitose – associated with clinical disease in Australia and New Zealand.

Dr Cheryl Jenkins' ongoing work includes sequencing the *T. orientalis* genome, which should reveal why some genotypes are harmful and others benign.

Transmission

The parasites are transmitted into a cow's bloodstream by feeding ticks. They multiply in white blood cells before entering the red blood cells, destroying them, causing anaemia and affecting the oxygen-carrying capacity of the cow.

MLA, along with United Dairyfarmers of Victoria and NSW Department of Primary Industries, is funding research into alternative modes of transmission.

The principal researcher, Gippsland veterinarian Dr Jade Hammer, is investigating whether *in utero* infection via placenta, blood transfer through animal husbandry practices (castration knives and needles) and biting insects, including mosquitoes, flies, lice and other ticks, could be responsible for the disease's spread.

Jade has discovered the bush tick, which is found on native wildlife as well as livestock, is a carrier of the parasite, confirming earlier reports from Japan.

Symptoms

The symptoms are common and could be attributed to numerous illnesses or conditions, particularly around calving time. Most at risk are calves (6–12 weeks old), heavily pregnant females and any animals under stress. The symptoms include:

- decreased milk production
- lack of appetite/ weight loss
- lethargy
- fever
- exercise intolerance (lagging behind the mob, even staggering or collapsing)
- pale and/or yellow gums and mucous membrane colour
- shortness of breath or increased respiratory rate
- abortions
- jugular pulsation
- animal down, unable to rise
- eating dirt
- death.

Diagnosis

The disease is impossible to accurately diagnose without veterinary intervention such as physical examination, blood test or post mortem.

Producers should not rely on the presence of ticks as an indicator of the disease. *Theileria* can be spread by relatively few ticks and the greater part of their life cycle is spent on pasture, not on livestock, so their presence is not always obvious.

Pale gums are a symptom of Theileria infection.

Researchers suspect this tick is a likely carrier of the blood-transmitted parasite, Theileria orientalis.

Ticks can survive for several months without feeding and *T. orientalis* may be able to remain infective in the tick for up to a year.

Treatment

There is no vaccine and treatment options are limited. Veterinarians have used oxytetracycline and/or imidocarb, but with doubtful beneficial effect. In rare cases, where highly valuable animals have been affected, animals have improved following blood transfusions – but these are time consuming and expensive.

The drug Buparvaquone (BPQ) is registered for use in about 20 countries and used under permit in New Zealand; however, the product requires Australian Pesticides and Veterinary Medicines Authority approval and the market here is considered commercially unviable.

Recent MLA-funded research assessing the drug's residue levels found that BPQ was still detectable in the liver, kidney and injection site muscles 147 days after treatment and a trade impact report concluded it posed a significant risk to Australia's beef export markets.

Jade said that in the absence of any effective treatment or vaccine, producers needed to focus on providing good nursing care to affected stock.

"High-quality feed and rest, and try not to move them," he said.

"If they are 'downer' cows, you treat them as downer cows and the vast majority will get over the infection.

Learn more at:

- **www.dpi.nsw.gov.au/biosecurity/animal/info-vets/theileria**
- **www.depi.vic.gov.au/agriculture-and-food/pests-diseases-and-weeds/animal-diseases/vetsource-information-for-vets/benign-theileriosis-in-victoria**
- **www.csu.edu.au/research/grahamcentre/downloads/beef_sheep_presentations/2012/2012-bfd-theileria-wagga-beef-forum-august-2012.pdf**

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Genetics

Smart tools to make smart decisions

Gone are the days of searching pages of Australian Sheep Breeding Values (ASBVs) for the right genetics. They can now be sourced with the scroll of your thumb.

Designed primarily for commercial producers, www.RamSelect.com.au, takes the hard yards out of comparing rams – providing practical, on-the-ground support on sale day.

The free tool is connected to the Sheep Genetics database, enabling access to listed sale catalogues.

By following simple prompts, the buyer's breeding objectives are matched to the rams available on LAMBPLAN, MERINOSELECT and Dohne Merino and ranked accordingly, leaving only the visual assessment to be carried out.

The information can be saved on a tablet and smartphone, or printed out for sale day.

Sheep CRC chief executive Professsor James Rowe said the tool would be a timesaver for many producers, giving them the benefit of selecting rams with ASBVs that match their enterprise objectives.

"After sale day, the user is reminded to return to **www.RamSelect.com.au** to save the list of rams purchased," he said.

"In future years, this information will be used to benchmark the flock and inform ram purchases."

For those producers wanting breeding values that fit in specific ranges, Sheep Genetics offers advanced search facilities in its database to pinpoint individual rams with the desired traits.

Further resources

Sheep Genetics manager Hamish Chandler said the Sheep Genetics website had several tools useful to ram breeders as well as helpful information for commercial producers.

"Ram buyers who are looking for more information on rams can access sale catalogues where they can find ASBVs and indexes for available rams," he said.

"They can also search for breeders in their area or for the breed they are interested in."

For those wanting to know more about interpreting and using ASBVs, the website offers easy-to-understand instructions and diagrams.

The website has been upgraded to enable ram breeders to find more information on the rate of genetic progress for their flock and to access MateSel, a selection tool aimed at maximising the rate of genetic gain while minimising inbreeding based on a group of candidate sires and dams.

"Sheep Genetics has also adopted an application programmable interface which means other websites, such as livestock marketing portal ClassiMate, can use its information – such as ASBVs," Hamish said.

"A practical application is that third parties are able to access the site and keep sale and AI catalogues up to date."

For those who want to learn more about genetics and how they can influence flock profitability, Sheep Genetics has other resources available.

"We have a series of technical videos – the Leading Breeder Forums – on our website, which discuss technical issues such as how to use MateSel; incorporating eating quality traits into terminal sire indexes; and Thomas Foods International's view on what impact lean meat yield and eating quality will have on the industry," Hamish said.

"We've also developed a new dashboard on the website for ram breeders, to make the information we have more accessible with the facility to look at trends, accuracy of selection and generation length – the components that are the drivers of genetic progress."

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Useful links:
www.RamSelect.com.au
www.sheepgenetics.org.au

Made to measure

Kangaroo Island sheep breeder Jamie Heinrich (right) is both a stud owner and a wool and prime lamb producer. With a foot in each camp, he understands the full spectrum of industry demands – from sourcing the latest genetics and leading trends to the commercial reality of producing sheep that pay.

The Heinrichs' 'Ella Matta' White Suffolk and Poll Merino studs are tucked away on Kangaroo Island, but in no way are they shielded from industry scrutiny.

"All our stud animals are recorded on LAMBPLAN and MERINOSELECT and benchmarked regularly through the year on key traits to check our flocks are heading in the right direction," Jamie said.

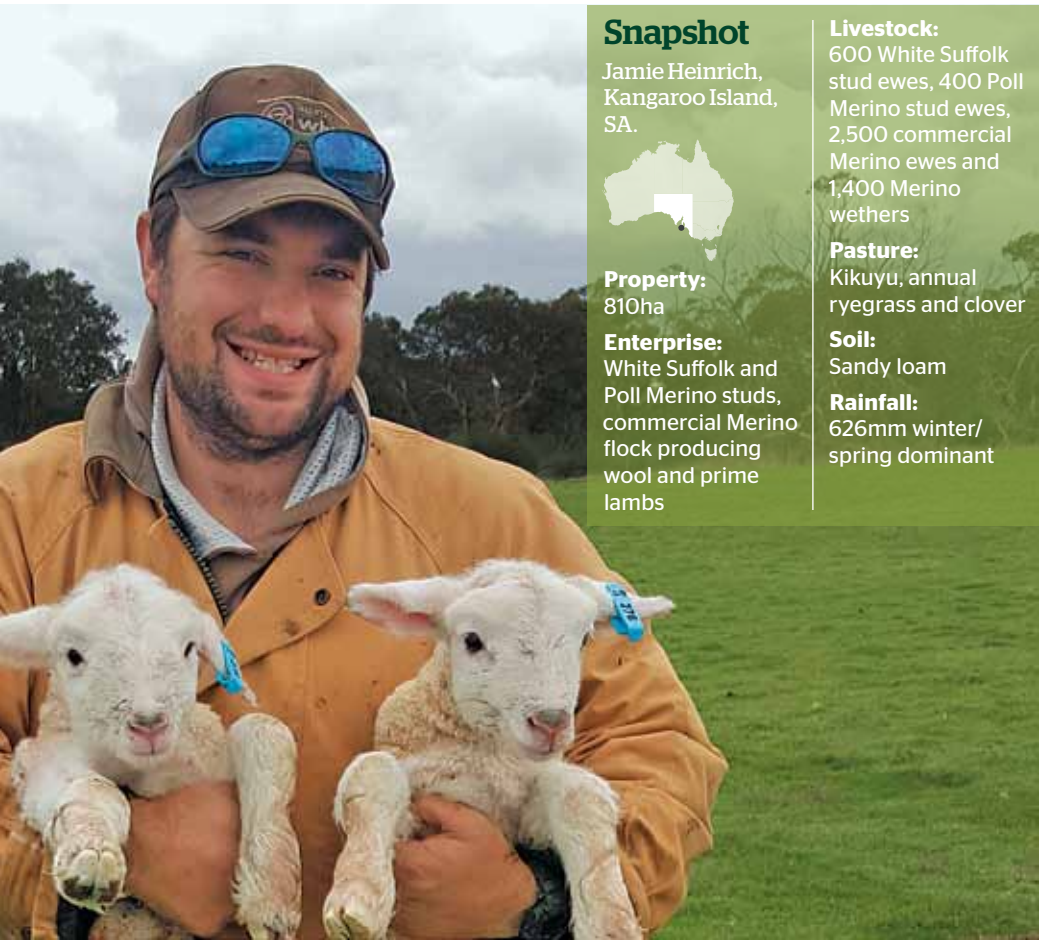
Their commercial flocks are the proving ground where genetic selection decisions are put to the test.

For Jamie, a commercially productive White Suffolk should have a good balance of growth traits and lambing ease.

"We focus on Australian Sheep Breeding Values (ASBVs) for growth, muscle, birthweight and number of lambs weaned," he said.

Their target market for prime lambs, White Suffolk-Poll Merino cross, is direct to processors at 22kg dressed.

At the stud level, Jamie is pushing birth weight ASBVs, aiming to keep their rams below 0.4 to ensure lambing ease.



Snapshot

Jamie Heinrich, Kangaroo Island, SA.

Property: 810ha

Enterprise: White Suffolk and Poll Merino studs, commercial Merino flock producing wool and prime lambs

Livestock: 600 White Suffolk stud ewes, 400 Poll Merino stud ewes, 2,500 commercial Merino ewes and 1,400 Merino wethers

Pasture: Kikuyu, annual ryegrass and clover

Soil: Sandy loam

Rainfall: 626mm winter/ spring dominant

Jamie's advice to commercial producers is to measure what you can to ensure the flock's genetic performance is improving.

Getting the genes

All outside White Suffolk genetics are sourced through artificial insemination (AI) from sires evaluated in LAMBPLAN with the occasional outside breed infused to boost genetic variability.

New Poll Merino sires are introduced through AI using MERINOSELECT with particular emphasis placed on fleece weight, carcase traits (particularly muscle and fat), wool traits such as micron (about 18.5), staple strength, staple length, minimal co-efficient variance and worm resistance.

"Fat and muscle are important; they help to lift 'doing' ability and lambing percentages, particularly in tough years, and they are traits that pay dividends at point of sale," Jamie said.

"Wool traits are important because they're the profit drivers. We also consider wrinkle score and bare breach to minimise flystrike and worm resistance, which all help lower costs of production."

The next frontier for Ella Matta is genomics, or DNA testing, and Jamie is using the tests on his White Suffolks to measure eating quality, shear force and intramuscular fat.

"We're also looking at using it on our best ewe lambs to identify our top genetics much earlier and to identify candidates for embryo transfer," he said.

On-farm reality

For commercial producers looking to get the best out of their flocks, Jamie recommended using genetic information and benchmarking services such LAMBPLAN, MERINOSELECT and Dohne Merino.

He stressed genetic selection must be supported by rigorous visual assessment to ensure animals are well conformed and structurally sound.

To assess how your sire choices are influencing production, Jamie's advice was to measure what you can.

"For terminals, collecting weaning and post weaning weights will help you compare average growth rates of your flock, year-on-year.

"For wool production, record fleece weights, micron, fleece staple length and strength and co-efficient variance. Building a record of performance will give you a clear indication of whether your breeding objectives are being achieved."

Jamie also recommended all sheep producers carry out mob worm tests, rather than rely on visual assessment.

Jamie Heinrich
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Jamie's top tips

- Use industry resources to find the best genetics
- Visual assessment is still important
- Know which traits relate to your profit drivers

Emissions Reduction Fund

Seeing the opportunities

Indigenous Land Corporation employee Garry Namponan takes time out to get up close and personal with the company's Brahmans.

Carbon trading in Australia may be in its infancy but cattle producers are already exploring how they can be involved.

According to Steve Wiedemann, agricultural scientist and principal consultant for FSA Consulting in Toowoomba, there are several opportunities for producers wanting to earn carbon credits while improving their productivity.

Steve said for an activity to qualify under the Emissions Reduction Fund (ERF), it must be a new project. However, if a producer has started, for example, improving herd productivity by pregnancy testing and removing empty cows from the herd at one property but not on another, the remaining property would still qualify because it is a new project there.

"The 'beef cattle herd management' methodology reduces enteric methane emissions by improving whole-herd feed efficiency, reducing emissions per kilogram of beef produced," Steve said.

"Producers can alter one, or a combination, of any of the major herd productivity factors such as weaning rate, survival rate, age at first calving and growth rates in young cattle.

"The method is not restricted to one particular way to achieve this improvement and many different changes can be combined to improve productivity."

For most producers, identifying productivity improvements is the easy part. They also need to look closely at project approval and reporting requirements.

Many producers will be eligible to submit projects for approval, but some operations might lack sufficient scale to participate on an individual basis.

"In our feasibility studies, we found producers needed to be running 10,000 animal units plus to generate sufficient returns by applying the beef herd management method to make it worthwhile entering the carbon market.

"Projects adopted by operations of that size could expect to return $40,000 to $80,000 which is an appreciable amount."

Steve said smaller producers, keen to become involved, could pursue aggregation whereby numerous producers can pool their projects and reductions and trade in carbon auctions as a single entity.

Doing the research

Consolidated Pastoral Company (CPC), which owns 20 properties across northern Australia, took part in MLA-funded research which involved a desktop study into the opportunities for the enterprise to reduce carbon emissions while improving productivity using the approved ERF methodologies.

CPC Projects Officer Elise Roberts said they identified several opportunities for reducing emissions by managing savanna burning, avoiding clearing and under the proposed beef cattle herd methodology.

"We are always looking out for innovative ways to achieve a more sustainable, efficient food production and enhance our animal, land and fire management practices," she said.

"By aligning these sustainability goals with the environmental initiatives of the ERF, we can see the potential for a mutually beneficial situation.

"For example, the ERF feasibility study identified that if we further developed breeder segregation infrastructure on just two of our stations, we could abate more than 10,000 tonnes of greenhouse gases per annum under the proposed beef cattle herd methodology while improving productivity of the herd through increased weaning and calving percentages.

"Building on these initiatives, we can see the savanna burning project generating more than 5,000 carbon credits per annum."

Elise said CPC is presently in the planning stages of implementing these projects.

The Indigenous Land Corporation (ILC) was also part of the MLA-funded desktop study.

Its agricultural subsidiary, National Indigenous Pastoral Enterprise Pty Ltd, operates 11 northern cattle businesses with a combined herd of about 90,000 head.

ILC Senior Policy and Environment Advisor Nerissa Walton said they were keen to understand and share the ERF opportunities.

"Given the ILC is already experienced in the savanna burning method (see the story in the July/August edition of *Feedback*), having implemented and sold credits from projects since 2011, our particular interest in participating in this study was to identify the opportunities presented by avoided clearing and the beef cattle herd management methods," she said.

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Useful links:
www.mycarbonfarming.com.au

Emissions Reduction Fund

AACo's gas reduction explorations

The nation's largest cattle producer, Australian Agricultural Company (AACo), is on a learning curve to meet potentially higher carbon abatement targets.

A method available under the Emissions Reduction Fund (ERF) for reducing greenhouse gas emissions through feeding nitrates to beef cattle could help AACo to aim for a 2% reduction in greenhouse gas emissions, within its current cost structures.

AACo's special projects manager Cameron Best said the joint venture with MLA was part of ensuring that the company is prepared for change.

"During the past five years there has been a lot of volatility surrounding carbon legislation; however, we expect that to stabilise before 2020 and for emission reduction targets to potentially rise," he said.

"It is probable that livestock production industries will have to reduce their 10% contribution to Australia's total greenhouse gas emissions. It's probably not equitable, nor sustainable, to expect the rest of the economy to carry that load.

"At AACo, we thought it important to investigate and to prove our capability in this area so, if legislation changes, reduction targets rise or carbon trading strengthens, we are in a position to respond appropriately."

Urea is a common supplement, particularly for northern rangeland cattle, and is often used to increase the amount of protein in the diet.

When some or all of the urea is replaced by nitrate supplements, such as calcium or ammonium nitrate, the cattle produce less methane as they digest their food.

Cameron said AACo conducted a desktop study combined with a field trial to identify that a 2% reduction of a northern breeder's greenhouse gas emissions was achievable from supplementation with a nitrate block.

"We believe we now have the embryonic capability to do this without compromising production or profitability," he said.

"Dialogue on developing the current capability is ongoing and related to other potential ERF projects, such as herd management methodology, which we see as synergistic with the nitrate methodology.

"At this stage, nitrate supplement blocks are not commercially available."

To be eligible for carbon credits, the feeding of nitrate-based supplements must be conducted using an approved ERF method.

The Feeding Nitrates method was developed in collaboration with MLA, AACo and the federal Department of the Environment.

It includes feeding nitrate to the herd as a lick block, not as a loose lick, which may have practical constraints for some enterprises.

The methane emissions avoided by feeding the herd nitrates instead of urea are estimated using the Beef Nitrates Calculator published by the Department of the Environment.

The Clean Energy Regulator website **www.cleanenergyregulator.gov.au** contains resources and topics including:

- → *A guide to the feeding nitrates to beef cattle method*
- → participating in the ERF
- → aggregation
- → legal rights

To view the relevant method or determination, make project applications and view the calculator visit:

www.environment.gov.au/climate-change/emissions-reduction-fund/methods

ERF news

In September 2015 the Federal Government approved a new ERF methodology for grassfed cattle producers: changed herd management techniques. The method includes practices that:

- → increase the ratio of weight to age of the herd
- → reduce the average age of the herd
- → reduce the proportion of unproductive animals in the herd
- → change the ratio of livestock classes within the herd to increase total annual liveweight gain of the herd.

www.environment.gov.au/climate-change/emissions-reduction-fund/methods/beef-cattle-herd-management

Business management

Moving into the pastoral zone

The More Beef from Pastures (MBfP) program continues to evolve with the most recent development being an MBfP manual for the pastoral zone.

Each of the existing MBfP modules – setting directions, managing your feedbase, managing your natural resources, cattle genetics, maximising weaner throughput, herd health and welfare and meeting market specifications – were modified using information relevant to enterprises in the arid zone.

More Beef from Pastures: The producer's manual remains central to the MBfP program. The interactive online manual is a package designed to deliver the essential principles and practices for a successful business.

The manual draws on the latest R&D as well as the knowledge, skills and experience of producer advocates who helped write the seven modules. Each module offers links to practical tools and resources to help producers improve their skills in that subject area.

Check out the pastoral manual at: **www.mbfp-pastoral.mla.com.au** or contact the MBfP coordinator in your region to find out about upcoming events.

National Coordinator – Peter Schuster
E: peters@schusterconsulting.com.au
T: 02 6887 3780

NSW State Coordinator – John Francis
E: john@holmessackett.com.au
T: 02 6931 7110

SA State Coordinator – Pene Keynes
(Pene is also the National Coordinator of the Pastoral Profit program – www.pastoralprofit.com.au)
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Tasmanian State Coordinator – Mel Rae
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Victorian State Coordinator – Darren Hickey
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T: 03 5152 0496

WA State Coordinator – Glen Brayshaw
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Keeping a close eye on costs

MLA's revamped Cost of Production Calculator now combines functionality for cattle, sheep and goat enterprises and is more user-friendly. ***Feedback*** spoke to West Australian cattle producers Kim and Kerrie Dunnet about the importance of understanding just how much a kilogram of beef costs you to produce.

Knowing their cost of production (CoP) has allowed Kim and Kerrie Dunnet to drive change in their enterprise, which focuses on turning off milk vealers.

Snapshot

Kim and Kerrie, David and Sandra Dunnet, Nannup and Scott River, WA.

Property:
1,200ha

Enterprise:
Cattle for the milk vealer market

Livestock:
1,000 cattle comprising heifers, cows, steers and bulls

Pasture:
Predominately ryegrass/clover at Nannup; predominately clover/ryegrass at Scott River

Soil:
Loam over clay at Nannup; Sandy loam at Scott River

Rainfall:
Nannup receives 800–900mm; Scott River receives 900–1,000mm

The couple have been keeping a close eye on their cattle enterprise's CoP for the past six years, following their introduction to MLA's More Beef from Pastures (MBfP) program through the Department of Agriculture Western Australia (DAFWA).

Together with Kim's parents, David and Sandra, the Dunnets run about 1,000 head of cattle, including about 700 first-cross Angus-Friesian cows.

"We first looked at what changes had to be made straight away and the ones we could work on in the future," Kerrie said.

"We gave ourselves a five-year plan to work with and to make as many changes as we were realistically able to.

"Just being able to see in black and white where your money has been spent and knowing how much it really costs to make a roll of hay, or grow out a calf ready for market, or grow your pasture, you can see where you are able to cut costs, make changes and work more efficiently.

"Our goal is to see where we can lower the cost of production by decreasing our inputs without compromising our production.

"We want to be able to increase our beef production and also continue making improvements that will benefit the farm in the future."

The biggest influences on the Dunnet enterprise CoP were found to be:

→ fertiliser costs
→ plant and equipment purchases
→ fuel and vehicle expenses associated with hay production
→ labour
→ general farm improvements
→ herd management costs, such as animal health.

"We can't do anything about the price of fertiliser, but we do make sure we soil test and plant test so we're able to use our budgeted product more efficiently," Kim said.

"With good fertiliser history we can manipulate the fertiliser products used according to their price variations each season, and know we still have a good regime.

"Cattle prices are largely out of our control when purchasing, but by identifying stock that will produce beef that suits our chosen markets, we're greatly assisting our sustainability.

"When it comes to plant and machinery, it's easy to fall into the trap of wanting a new tractor, ute or hay equipment, but it's a large component of your CoP, so we always consider carefully before replacement and make sure we shed and maintain what we have."

The biggest efficiency gains for the Dunnets have come from their changes to pasture and herd management.

"We've increased our pasture production and utilisation, with the main change being controlled rotational grazing," Kim said.

"This has allowed us to increase our stocking rate, which has been the biggest and most successful change.

"Pregnancy testing is also an important part of our program now, because it allows us to dispose of empty cows and immediately replace them with mated heifers, which ensures our herd fertility is maintained."

Kim and Kerrie Dunnet
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www.mla.com.au/tools

Kim and Kerrie Dunnet recently featured in an MBfP YouTube video, explaining how they use the MBfP online manual to help make decisions about their business.

"The manual is a practical reference we can refer to when we need it," Kim said.

"The availability of MBfP webinars is also very handy. Being able to be involved with seminars online, and not have to leave the farm, is a valuable time saver."

Visit **www.mla.com.au/mbfp**

Business management

What does it take to produce the best lamb?

Snapshot

The McGorman family, Sanderston and Conalpyn, SA.

Property:
3,200ha (owned and leased) at Sanderston; 1,200ha at Coonalpyn

Enterprise:
Breeding and finishing lambs, cropping

Livestock:
2,000 second-cross South African Meat Merino ewes, finish 25,000 lambs a year (8% from their own production)

Pasture:
Lucerne for finishing

Soil:
Sandy loam at Sanderston, deep sandy soils at Coonalpyn

Rainfall:
300mm

The McGormans' Thornby Lamb ticked the boxes for tenderness, flavour and juiciness to win the title of Australia's Best Lamb in the 2014 LambEx competition, which recognised best practice from breeding to finishing.

John McGorman runs the mixed enterprise with his sons Paul and Alex (pictured above). Their late mother, Helen, played an integral role in developing their brand and now Paul's wife, Kimberly, and Alex's wife, Fiona, are active in the business.

The family established a grain finishing system at Sanderston 12 years ago to get lambs to saleable weight before grass seeds in late spring could damage the carcase. It has grown to an annual turn-off of 25,000.

In 2009, the McGormans became one of the few producers in Australia to achieve accreditation with AusMeat's Livestock Production Assurance Scheme for Grain Fed Lambs. This opened up an opportunity to supply Thomas Foods International (TFI).

The original Thornby Grainfed Lamb brand was sold through the McGormans' butcher shop in the Barossa Valley, which was sold in 2012 to refocus on the production side of the business.

They relaunched 'Thornby Premium Lamb' in 2015, and supply premium butchers, supermarkets and the foodservice industry around South Australia.

Here, Paul McGorman outlines the important factors that underpin Australia's best lamb.

1. Breed selection

Second-cross South African Meat Merino (SAMMs) are a low maintenance fit, where reproductive performance and weight gain are the main focus and wool is a by-product.

"Our aim is to have a quality lamb we can grow out in the feedlot for a good, fast finish," Paul said.

"We operate on the basis that the quicker we finish lambs, the more tender the meat we produce."

Of the 25,000 lambs the McGormans finish each year, about 8% are home-bred and the rest are sourced from across the state, where they look for cross-bred lambs of around 35kg.

2. Flock management

Lambing is in April and lambs graze on lucerne at Coonalpyn before being brought to Sanderston in late August-September, where they are finished on a grain-based diet.

Over the years, the McGormans have adjusted their production system to maintain a quality finished product. For example, grass seed contamination can be an issue at Coonalpyn, so the finishing system allows them to get lambs off before seed set in October. They avoid buying lambs from areas such as the south-east in spring when there is a high level of grass seeds, to minimise risk of contamination.

The family are part of a Making More From Sheep group in the Mallee, which they use as a flock benchmarking tool. They are also investigating improved pasture options at Coonalpyn as a result of the program.

3. Nutrition
The McGormans have fine-tuned their feed ration for optimal performance during the 40–50 day finishing program. Lambs receive a starter ration, move onto an intermediate ration and then are fed a final ration. Rations vary, but will generally contain a blend of barley, oats, lupins and hay – the majority of which is home-grown. The McGormans target a carcase weight of 27kg dressed (58–60kg liveweight).

4. Technology
Paul is conscious of how consumers can misinterpret industry terms. Their 15,000 head feedlot is described as a 'lamb finishing yard'. The finishing yard has a five-away auto-drafter. While weight is the main criteria, Paul maintains social groups on the basis that lambs settle in to the business of growing when they are with familiar animals.

5. Traceability
An individual traceability system tracks lambs through the production systems and records origin, any treatments and feed intake.

While data collection is currently manual, the McGormans are participating in a University of Adelaide trial to investigate how electronic identification tags can improve their record-keeping, increase efficiency and track the performance of animals from different suppliers.

"You can't improve what you can't measure," Paul said.

Paul said the Thornby point of difference was a naturally produced, traceable, high-quality lamb.

"We hand select each lamb for the Thornby Premium Lamb brand to ensure consumers enjoy the best we have to offer," he said.

"By taking the time to look closely at each lamb, we can find the one with the ideal amount of fat; not too much – to keep the meat a healthy choice – but enough to ensure the meat performs the best when cooked.

6. Low-stress handling
The McGormans aim to keep lambs happy and free from stress so they produce a better quality product.

"Handling and husbandry really underpin the success of our operation," Paul explained.

Changes in diet are managed by providing good-quality hay before animals enter the finishing yard and while adjusting to the new ration. Central laneways in the finishing yard reduce handling and allow easy movement of stock.

Transport is also important. The McGormans pick up most of the lambs they buy, and transport all finished stock to TFI. Thornby is 40–45 minutes' drive from two TFI plants at Murray Bridge and Lobethal.

"It is important to have as much control of our lambs as possible," Paul said.

"Owning our own truck gives us the flexibility to transport lambs early in the day during summer to reduce heat stress."

7. Best practice
The McGormans road-tested a lamb finishing self-auditing tool in 2010, as part of the National Code of Practice for Intensive and Sheep and Lamb Feeding Systems. The development of this code was managed by industry consultants Productive Nutrition Pty Ltd and overseen by MLA.

The self-auditing tool came into its own when the family applied to the local council to expand the finishing yard.

"Previously, the council only had guidelines from other industries to go by, but this time it was a straight-forward process as they had a code of practice for the lamb finishing industry," Paul said.

Paul said the tool was a good resource for producers developing a finishing system, as it covered yard design and animal husbandry best practice.

8. The environment
The family plants 500 to 1,000 trees a year around the finishing yard and along fences for shade and protection. Sloped yards and central laneways drain water away from the yards towards the tree lines.

The McGormans, who have a water licence in the Marne-Saunders Catchment, have implemented strategies to conserve water. They replaced standard large troughs (250L) with 45–50L troughs, which reduces the amount of water used during daily cleaning and draining.

9. Labour efficiency
Five full-time staff are employed, with skills that can be utilised across the business. They don't need to employ seasonal labour for busy periods in the cropping calendar as the finishing yard can operate with minimal labour, enabling staff to transfer from the stock side of the business to seeding or harvest.

10. Business performance
The McGormans focus on sound business practices. They hold formal quarterly board meetings with an independent chairman.

Lessons learned

- Know your market. You can't target a product without knowing what your customer wants.
- Do the sums. Your business needs to be profitable.
- Start off small but with the end in sight. Aim for scale and efficiencies that are manageable.

Tools

- National procedures and guidelines for intensive sheep and lamb feeding systems: **www.mla.com.au/intensivesheepandlambfeeding**
- **www.mla.com.au/tools**
- **www.makingmorefromsheep.com.au**

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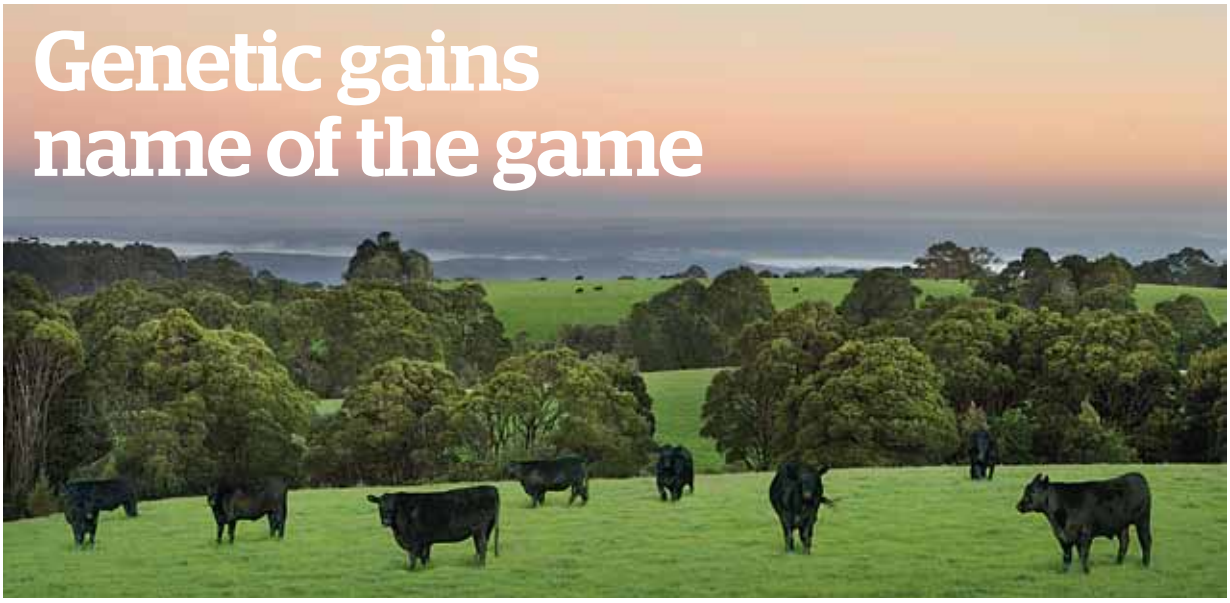
Photos courtesy of James Knowler Photography.

Genetics

Genetic gains name of the game



Southern Breeding Technology Services (SBTS) will notch up a decade of genetics technical and extension support to the cattle industry as stage two of the project concludes in December.

Funded by the MLA Donor Company, 14 breed associations and the Agricultural Business Research Institute, SBTS has been the backbone of genetics progress in southern cattle herds.

The project has helped producers apply research outcomes from the Beef CRC, supported BREEDPLAN, and developed numerous genetic selection tools, indexes and information resources.

Genetic gains

SBTS project manager Alex McDonald said the project's greatest achievement was helping southern beef breeders improve their herds' rate of genetic gain – an achievement that has benefitted every beef producer.

"The project's original objective was to increase the weighted selection index by $15/cow mated from the base year of 2008 to 2013," he said.

"This has been exceeded by 22%, to $18.33/cow mated/year."

This has meant the average weighted change in selection index trends of the southern seedstock sector has effectively doubled during the five years of the project.

Index support

SBTS may not be a well-known entity, but its extensive technological and extension support has affected almost every southern beef-producing enterprise.

A major role of its team is to maintain and update the 32 selection indexes for the 14 stakeholder breeds, including Angus, Hereford, Shorthorn, Limousin, Red Angus, Charolais, Murray Grey, Simmental, South Devon and Wagyu.

Boosting BREEDPLAN

In addition to number-crunching, SBTS continues to provide technical support to breed societies for software upgrades, development of new genetic selection tools and the integration of new Estimated Breeding Values (EBVs).

As each breed has been moved to the new International Livestock Registry 2 (ILR2) database, they receive monthly genetic analyses instead of receiving them only once or twice a year.

The Gelbvieh and Blonde d'Aquitaine breed societies have most recently moved to monthly group BREEDPLAN analyses and are now able to produce enhanced BREEDPLAN reports.

Alex said SBTS promoted the Beef Information Nucleus programs for Angus, Charolais, Limousin and Wagyu and continues to assist in the development of new EBVs for various breeds (see story on page 26).

"In recent times we helped implement Calving Ease Direct and Calving Ease Daughters EBV analysis and publication for Red Angus and Docility EBVs for Hereford and Simmental," he said.

Extension

SBTS has been helping breeders make more informed bull-buying decisions through their BullSELECT workshops.

During the past five years, 23 workshops have been held, attracting 470 breeders who gained a better understanding of the genetic information and selection tools available.

Other work by SBTS staff includes on-farm consultations, delivering workshops, creating a library of webinars and developing a host of other online information, such as the SBTS Update and monthly TechTalk articles.

"We use social media as an additional communication stream for genetic technology updates including Twitter, Facebook and the SBTS and Tropical Breeds Technology Services YouTube Channel for uploading recorded webinars and videos," Alex said.

"Presently, we have 40 videos on YouTube relating to genetic technologies for the beef industry."

23

SBTS BullSELECT workshops held in past five years, upskilling

470

cattle breeders

14

breed societies contribute to SBTS

SBTS' library of online information, including webinar courses are available at **http://sbts.une.edu.au**

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Breeding for profit

Dennis and Susie Stewart quickly recognised the decade-long contribution of Southern Beef Breeding Technologies Services to developing genetic selection tools and resources, impacts on their business almost every day.

Susie and Dennis Stewart, with their granddaughter Georgie, use breeding and selection tools to keep their herd achieving an above average rate of genetic gain.

The Stewarts, who run an Angus breeding operation on 8,502ha west of Condobolin, are dedicated herd improvers.

They employ technologies such as Fixed Time Artificial Insemination (FTAI), BREEDPLAN estimated breeding values (EBVs), and apply selection pressure on fertility and reproduction to their females to ensure each generation is more profitable and productive than the last.

Maximising genetic gain

To maximise their rate of genetic gain, Dennis and Susie have been members of Team Te Mania, an initiative of the Victoria based Te Mania Angus stud, for the past nine years.

"It was a way of getting access to the latest genetics for our artificial insemination (AI) program and, for our cow herd, a way to access bulls of high genetic merit through their lease program," Dennis said.

"The team provides some economies of scale and we also have expert genetic and technical advice on tap."

The Stewarts run 800 breeders with half calving in spring and the rest in autumn to make better use of their bulls.

Using Fixed Time AI

Heifers are artificially inseminated, at about 14-16 months old, with one round of FTAI and no back-up bull.

AI pregnancy percentages are generally good, and Dennis and Susie have used highly ranked sires, which combine low birth weights and short gestational length, with above average growth and $ index values in the top 5% of the breed.

"We usually AI in November and this year we're looking for a suitable sire to tick all those boxes and improve marbling," Dennis said.

Split calving

Any heifers that fail to fall pregnant from AI are transferred to the other herd (e.g. spring heifer goes to the autumn herd) and there they have another opportunity to reproduce.

With an extra six months maturity, the heifer will be joined and, at three years old, will calve without additional supervision.

Cows are joined for eight weeks to sires with above average EBVs for calving ease, growth, particularly 200 and 400-days, and intra-muscular fat (IMF), also known as marbling.

"Most of the steers are grown out to 380kg-420kg and are sold direct to feedlots, such as Rangers Valley, or offered on Auctions Plus and the feedback we're getting from buyers is that marbling is a trait they really value," Dennis said.

Young herd

Cows that fail to become pregnant are culled. Those that remain productive in the herd are sold between six and eight years as breeders.

"Our first calvers usually achieve about an 80% pregnancy rate which is down on the cow herd average of about 93%," Dennis said.

"With their whole breeding life ahead of them, and the fact they possess some of our most superior genetics, we tend to give them a second chance with the alternate herd."

Snapshot

Dennis and Susie Stewart, Condobolin, NSW.

Property: 8,502ha

Enterprise: Angus beef breeding for feedlot entry, cropping (share-farmed)

Livestock: 800 Angus breeders

Pasture: Oats under sown with lucerne, medics and clover

Soil: Sandy loam, red and grey clay soils

Rainfall: 400mm

Dennis and Susie Stewart
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Genetics

Progeny projects pay off

Australia's largest-ever cattle breed progeny test program, the Beef Information Nucleus (BIN), has had an impact in 85% of the nation's seedstock herds.

Sam Gill, MLA's Project Manager, Beef and Data Insights, said the BIN project had fast-tracked genetic progress during the past six years and was now delivering real outcomes at the farm gate.

"The BIN has had the most widespread impact on our beef industry of any research project undertaken," he said.

"It has built genomic reference populations, improved accuracy of BREEDPLAN's estimated breeding values (EBVs) and collected information on many hard-to-measure traits such as 'particular carcase qualities', 'feed conversion' and 'eating quality'.

"As a result, we now have increased confidence in BREEDPLAN, better connectivity between herds and more engagement between breeders, and we've identified some exciting new sires.

"We have also collected information for new traits such as 'methane emissions' and 'parasite resistance'."

So far, eight breeds have been involved in the BIN, with the Shorthorn, Angus, Hereford, Wagyu, Limousin, Charolais, Brahman and Droughtmaster societies each at various stages of the project.

Sam said funding for each BIN was provided by the breed society and the MLA Donor Company (no producer levies are used).

"The next challenge will be to develop multi-breed progeny tests and to underpin carcase measurements with a genetic evaluation system," he said.

Want to improve your knowledge of cattle genetics? Try these resources:

- → **www.mla.com.au/genetics**
- → **www.breedplan.une.edu.au**
- → **www.breedobject.com**
- → More Beef from Pasture Module Four: Cattle genetics **www.mla.com.au/mbfp/Cattle-genetics**

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What's come out of the BIN?

Here's an update on what has been learnt about three of the breeds in the BIN program.

Angus

The Angus Sire Benchmarking Program, the largest of the BIN projects, is joining its sixth cohort this spring.

The breed's strategic project manager, Christian Duff, said the program aimed to join an average of 40 sires a year to about 2,000 cows in southern-based cooperator herds, using Fixed Time Artificial Insemination (FTAI).

Information collected from earlier cohorts is already being used by producers through higher accuracy BREEDPLAN estimated breeding values (EBVs).

Cohorts one and two have contributed carcase, reproduction and calving data while cohort three's steer portion has entered the Tullimba Research Feedlot to undertake net feed intake testing.

The cohort three heifer reproduction outcomes to natural mating will be known this spring, following their calving as two-year-olds.

Cohort four's weaning and docility data was included in the March 2015 BREEDPLAN analysis and heifers will be joined this spring.

Cohort five females have recorded a 51% conception rate to one round of FTAI, with calving to start in early July.

Cohort six has received 38 early sire nominations, with the bulls averaging in the top 10% for the Angus Breeding Index and Heavy Grain Index.

Information: www.angusaustralia.com.au

Charolais

The Charolais BIN, now finished after four cohorts, evaluated the progeny of 50 Charolais, 18 Limousin and four Angus to enhance the estimates of the Charolais Society crossbreed EBV traits.

The society's breed development manager, Colin Rex, said 1,200 progeny were produced from either Angus or Brahman cows and birth, growth, feedlot and slaughter data were recorded for all progeny.

A random sample from the progeny of all sires was collected for meat science analysis.

"The data showed that dystocia was not a major problem for any of the breeds represented, with less than 2% in the worst year and less than 1% in the typical year," he said.

The data was added to BREEDPLAN last November.

Colin said the project produced an estimated benefit-cost ratio of 2:1 due to the projected increase in the use of superior animals within the breed and the industry in general.

Information: www.charolais.com.au

Limousin

Limousin BIN technical officer Alex McDonald said their project had concluded after three cohorts and measured the progeny of 30 young sires.

"We now have high accuracy EBVs for 30 young sires we wouldn't otherwise have, with some in the top 1% of the breed based on indexes," he said.

"We didn't have adequate numbers in the project to be able to do discovery of prediction equations, but we do have useful data for validating prediction equations from our other sources."

The project confirmed that neither the US Merial prediction equations (a system using genomic assessment) nor the Beef CRC's multi-breed prediction equations were accurate enough to be included in BREEDPLAN.

Information: www.limousin.com.au
Search 'Information Nucleus Bulls' under 'EBV Enquiry' to find the evaluated bulls.

Supplementation

Delving into P deficiencies

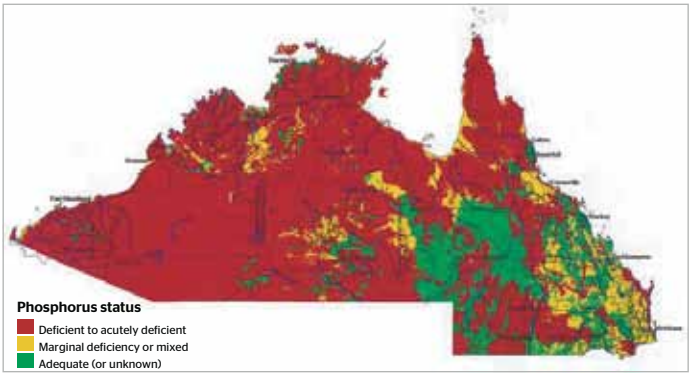
Wet season phosphorus (P) supplementation for cattle grazing P-deficient country has long been recognised as highly beneficial, usually providing excellent economic returns.

In highly deficient country, it is known to result in liveweight gains of 60kg or more and to lift branding rates by 10–15%.

However, despite this widespread recognition, only a small proportion of cattle – researchers estimate 10% – grazing P-deficient rangelands are adequately supplemented.

Given this conundrum, MLA has funded several research projects to help cattle producers increase their profitability by making more informed decisions about how, when and why they should feed P.

Find out here what some of that research has revealed.



About 70% of the northern beef-production area is acutely deficient in phosphorus.

What's new in phosphorus research for northern Australia?

→ Blood tests are the most reliable indicator of P deficiency in cattle diets.

→ Large benefits in supplementing breeding heifers and cows with P.

Putting it to the test

University of Queensland (UQ) senior research officer Dr Simon Quigley and his colleagues, and Tim Schatz from the Northern Territory Department of Primary Industries, recently confirmed that a blood test from growing cattle consuming a diet with adequate protein and energy is the most reliable indicator of phosphorus (P) intake and the P content of the diet, and therefore P status of the paddock.

Faecal testing for phosphorus deficiency was also examined but was found to be less reliable.

The research found the tests work best when:

→ random blood samples are taken during the first round muster at the end of the wet/start of the dry from growing cattle

→ samples can be collected from the tail or the jugular vein.

Growing cattle only need to be tested once.

"Once you have established that a paddock is P deficient, it's important to prioritise the stock classes requiring supplement. A priority would be growing cattle during the wet season, particularly heifers and first lactation cows and steers to be sold," Simon said.

MLA-funded research at UQ demonstrated that Brahman-cross steers take four to five weeks to deplete P stores when consuming a P-deficient diet, which results in lower feed intakes and much reduced liveweight gains.

In the second part of the experiment the P-deficient animals' performance improved almost immediately when they were provided with supplement.

"They went from maintaining, or even losing liveweight, to gaining 1.3 kg/day," Simon said.

"This showed that cattle that are P depleted respond very quickly to the provision of additional P when protein and energy in the diet are not limited, demonstrating the importance of having P supplements available at the break of the season to capture these benefits."

Delivering to the breeders

University of Queensland Senior Research Fellow, Dr Rob Dixon, is leading a research team on an MLA-funded project aimed at better understanding the phosphorus (P) needs of breeder cows during pregnancy and lactation, when the cow has high demands for P for the foetus and milk production.

According to Rob, breeders' peak demand for P usually coincides with the wet season when supplementation for some producers becomes problematic and appears unwarranted.

"Even when P supplements are fed, it can be difficult to get breeders to eat sufficient loose mix or block P supplements," he said.

To address these issues, the research team is conducting a series of major experiments at the Queensland Department of Agriculture and Fisheries' Brian Pastures Research facility at Gayndah.

They are investigating the consequences of feeding P supplements from the late wet season through to the late dry seasons when it is logistically much easier to feed them.

"In these experiments both heifers and mature breeders were kept under controlled conditions and measurements made during mid or late pregnancy, and during early lactation on P-deficient or P-supplemented diets," Rob said.

"Intensive measurements are providing a detailed picture including feed intake, live weight gain or loss, digestion, milk production and calf weights.

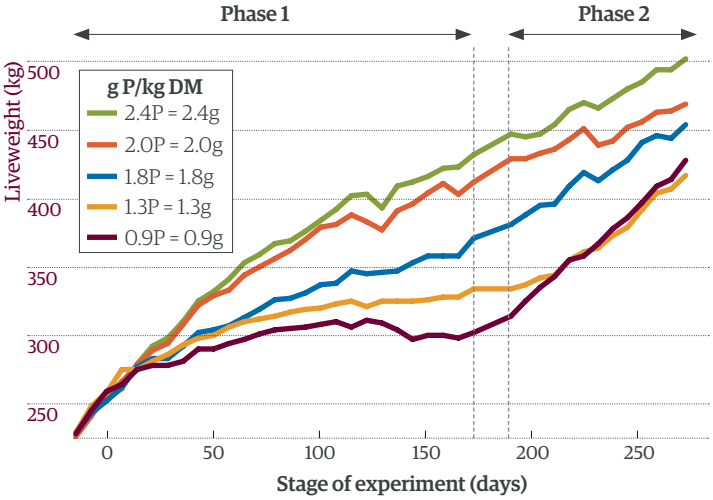
"Blood and urine is being sampled to better understand the hormonal control of P nutrition in breeder cattle, and to try to develop better diagnosis of P deficiency from blood, urine and faeces."

The two major experiments so far have shown the large benefits of P supplements on feed intake and heifer/cow liveweight.

For example, Rob said heifers fed a highly P-deficient diet and supplemented with P during the last four months of →

Above: Steers that took part in the trial demonstrated the significant effect of phosphorus on liveweight gain. The steer on the left consumed a diet with a low P content while the steer on the right consumed a high P diet over the same period of time.

Figure 1 **Change in liveweight of steers fed diets with increasing phosphorus (P) content**



pregnancy were 50kg heavier at calving – the cows fed P gained 30kg while those that were not, lost 20kg.

However the birth weights of their calves were similar because the cows looked after their calves to their own detriment.

Rob also said P supplementation had large effects during early lactation on both cow liveweight and calf growth.

"Three months after calving there was up to 100kg difference in cow liveweight," he said.

"Those fed P through both pregnancy and lactation were in very good body condition, while those that had been P-deficient through these intervals, had badly run down their body reserves."

P supplementation proved to have a large effect on milk production which increased calf weight by 30kg at three months of age.

Rob said the trial clearly demonstrated that P supplementation can greatly improve the body condition of the cow at calving with the many benefits such as the cow re-joining quickly so she is more likely to produce a calf each year, and also heavier weaners for more kilograms of beef/ha and easier management.

In another experiment, the team tested the benefit of P supplementation of cows for several months immediately post-weaning and when the cows were in mid pregnancy.

Cows were fed a low-energy diet to represent mid dry season pasture in a 'normal' year, and a high-energy diet to represent good pasture during a favourable late wet season.

"In cows fed the diet representing the mid dry season, the P supplement changed a small live weight loss to a small live weight gain," Rob said.

"However, in cows fed a diet representing good wet season pasture, the P supplement increased live weight gain from 0.2 kg/day to 1.0 kg/day.

"This really demonstrated that even when producers are not able to feed P supplements during the early and mid-wet season when the cow needs P the most, there should still be benefits from P supplementation in the late wet and early dry season.

"It also showed breeder cows in P-deficient conditions on good quality pastures will show an enormous live weight response to P with all the benefits that flow on from that."

No bones about it

One of the great northern beef industry quandaries is how to get P-deficient cattle to eat P supplements provided in the economical forms of loose mixes or blocks.

"Where cattle are salt hungry it's not so much of an issue, but where they do not have an appetite for salt, it is often a substantial industry problem," Rob said.

The project team has been investigating a novel approach to this problem.

P-deficient cattle often chew bones. The team has been investigating whether this strong attraction of P-deficient cattle to bones could be used to get cattle to eat more P supplement during the wet season.

Team members with specialist skills have identified the chemical compounds causing the odours and this animal behaviour.

Rob said some of the scientific literature indicated that this behaviour is 'hard-wired' (programmed into their genes) and associated with the smell and/or taste of chemical compounds in the old bones.

"The idea was that it may be possible to use these smells or tastes to attract P-deficient cattle to commercial P supplements," he said.

However, to the surprise of the team, the first experiment indicated that this attraction behaviour is learned by cattle rather than being a hard-wired response.

"Even so, if it is a learned response, it may be possible to use the principle involved to develop P supplements and management techniques to improve P consumption," Rob said.

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To download MLA's *Phosphorus management of beef cattle in northern Australia* visit: **www.mla.com.au/northernphosphorus**

The project team: Rob Dixon, Mary Fletcher, Stephen Anderson, David McNeill, Carol Petherick, Marcelo Benvenutti, Llorenc Castells Domingo, Kerry Goodwin and with the support of the staff at QDAF Brian Pastures Research facility.

Desmanthus for dollars

Snapshot

Alan Postle, Wandoan, Qld.

Property: 502ha

Enterprise: Breed South Devon cattle, turning off steers at 550–600kg live weight aimed at the EU market.

Livestock: 130 cows (drought-reduced herd, usually 160)

Pasture: Green panic grass, buffel grass, medics

Soil: Mostly vines scrub, softwood, bottle tree country but trials on hard setting, box, bauhinia, sandalwood and myall country

Rainfall: 625mm

Wandoan cattle producer Alan Postle is convinced planting legumes, such as desmanthus, is a great investment.

Trial plots on his property 'Kookaburra', near Wandoan, have shown that annual beef production can be increased 40–100% by grazing legumes/buffel grass, compared to grazing pastures alone.

"We've had more than 700 legume lines tested here and at our other property during the past 30 years and desmanthus has been one of the best for production and persistence," Alan said.

"Cattle do well on it, it holds its own with (Biloela) buffel and – if I want to return country to cultivation – I can spray it out and get rid of it."

Queensland Department of Agriculture and Fisheries Senior Pastures Agronomist Gavin Peck said the legume trial at Kookaburra consisted of two 10ha plots – one planted to Biloela buffel only and the other planted to buffel and the Jaribu desmanthus mix.

This mix is no longer available; however, Gavin said the new Progardes blend should perform similarly or better.

"Soil tests revealed Kookaburra to be phosphorus (P) deficient so we also tested how legumes responded to five different rates of P fertiliser with a background application of potassium (K), sulphur (S) and zinc (Zn) and a high rate of P without K, S and Zn," he said.

"We drilled the phosphorus 5–7.5cm deep into the soil, on 30cm tyne spacings, and found it increased pasture yields dramatically up to rates of 50kg P/ha.

"The pasture also responded to K, S or Zn or a combination of these nutrients."

As part of measuring the benefit of these legumes, steers were grazed on the trial plots and liveweight gains were recorded.

Blood tests of the animals showed they were P deficient as well as marginally copper deficient. To continue the trial they were supplemented with bicalcium phosphate and molasses and given a copper rumen pellet.

"Consequently, steer weight gains improved dramatically during the summer to autumn period," Gavin said.

"Unsupplemented, in the first year, they recorded weight gains on grass of only 0.02kg/head/day and, on legumes, of 0.18kg/head/day.

"However, in the second year – once supplemented – their weight gains improved to 1.5kg/head/day on grass only and 1.9kg/head/day on legumes."

Gavin said there were several key take-home messages from the trial for producers in the Brigalow belt.

"If you're grazing grass only, planting legumes is the single biggest production boost you can give your business," he said.

"Don't take any shortcuts with legume establishment. If your soil is P deficient, fertilise legume-based pastures. It's an investment that will return dividends for decades.

"Test your stock's P status. P deficiency in animals grazing on Brigalow soils could be far more widespread than previously thought."

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How to successfully establish legumes in grass pastures

Plan ahead
- → Kill the grass and weeds to reduce competition.
- → Store moisture.
- → Select the most suitable varieties for climate and soil type.
- → Ensure planted area can be spelled after sowing.
- → To reduce cost, sow in strips where the pasture has good grass species.

Check soil nutrition is adequate
- → Some legumes have high phosphorus (P) and sulphur requirements. If soil P levels are low, plants will be stunted and grow poorly, so P fertiliser may need to be applied at or prior to planting.

Select the right legume
- → Seek expert advice to choose the best species for your situation.
- → Consider: soil type and nutrition, frost tolerance, rainfall, life span (perennial or annual), persistence, time of maturity and grazing management.

Use quality seed at recommended planting rates
- → Aim to sow at least 1kg/ha of pure live seed.
- → If using coated seed, seeding rates per hectare must increase, potentially 3–5 times, based on the coat to seed ratio.

Prepare a suitable seed bed
- → Aim to maximise seed–soil contact and reduce competition.
- → Hard-setting soils should be opened up to promote water infiltration.
- → Seedbeds where the soil is fine but firm often have the best germinations.
- → Plant small seeded legumes on top or just under the surface (e.g. for stylos) or no more than 20mm deep (e.g. for desmanthus).
- → Larger seeded legumes (e.g. leucaena, butterfly pea) can be sown deeper, down to 40mm.

Plant at the right time
- → In most years planting in January–March, during the wettest months, gives new seedlings the highest chance for follow-up rainfall and less chance of heat waves. However, an early frost can kill small seedlings.

Post-sowing management
- → Success of legume persistence depends on good grazing management during the first year.
- → Legumes should not be grazed until the seedlings have developed a strong root system and grazing should be managed to allow the legumes to set large amounts of seed.
- → Leucaena is the exception – it can be grazed once the seedlings have reached about 1.5m high.

Ambassadors

Red meat's advocates

MLA's international offices have been working with ambassadors for many years to promote Australian beef and lamb in markets such as China, Indonesia, the Middle East and the US.

The use of brand ambassadors is a powerful marketing tool that relies on positive word-of-mouth recommendations and, increasingly, harnesses the power of social media.

MLA General Manager International Markets Michael Finucan said having independent opinion leaders talk about Australian product was vital.

"Ambassadors give the consumer a credible alternative source of information on red meat and how to use it, and it helps MLA spread its messages about beef, goat and lamb," he said.

"We work with the ambassadors and educate them about our food safety and traceability systems, and where the product comes from and how it's produced, and then they are able to passionately communicate these messages to their fans and customers.

"The ambassadors are generally well-known chefs, housewives (the main purchasers in many Asian markets), or other leaders in their professions.

"They often have a social media presence or loyal fans, which gives us the opportunity to leverage off their popularity and get greater exposure. Through them we can share recipes or key messages with a broader audience."

A regional flavour

Michael said each international office put its own take on the ambassador concept.

"For example, the Japan office went out and sought ambassadors for a particular issue, which was to get the top restaurants in Tokyo using more lamb," he said. (See story page 31).

"The Japan 'Lambassador' program kicked off in April 2015 and will use the Lambassadors for targeted activities to promote lamb to consumers and industry professionals.

"In the developing market of China and South Asia, we've been using what we call Red Majesty Chefs for the past three years. These are local food industry identities who have been using Australian beef to cook local dishes and who are helping us with promotions.

"Last year in Korea, we wanted to launch an Australian beef barbecue and camping promotion, so we used a high-profile TV chef popular with younger consumers. That was a six-month ambassadorship because, again, the campaign had a specific target."

Long-term relationships

MLA has highly successful relationships with long-term ambassadors who have become passionate advocates for Australian red meat.

They include celebrity chef Tarek Ibrahim from Dubai and *MasterChef* Indonesia judge Vindex Tengker.

As MLA Middle East's executive chef, Tarek is technically an MLA employee, but he has also become a powerful ambassador – promoting Australian beef and lamb's safety systems, products and quality to his legion of fans.

"Tarek is a hugely respected chef," Michael said.

"He was the first Arab chef to receive the status of Master Chef from the World Association of Chef Societies and his TV shows are watched by hundreds of millions of people.

"His Facebook page, which promotes *True Aussie Beef and Lamb*, has 47,000 likes."

Michael Finucan, MLA
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Making the menu in Miami

US-based chef Aaron Brooks (pictured) was born in Sydney, grew up on the Gold Coast and had his first lesson in the kitchen with his mum, who also worked in the food industry.

After completing his apprenticeship and working in Australia, Aaron headed to the US in 2010. He worked at the Four Seasons Hotel Boston before moving to Miami almost four years ago.

When asked to represent Australian lamb, Aaron said his reply was "an automatic 'yes'".

Here he shares his love of lamb with *Feedback*.

Where do you work and what does your role involve?
I am the executive chef of Four Seasons Hotel Miami and EDGE Steak & Bar. I oversee the entire food operation for the hotel and restaurant.

What do you love about Australian lamb?
It's what I grew up on, so it has a very special place in my heart, and the flavour is second to none. The rigorous grading standards held up by the Australian industry ensure only top quality lamb makes it to the plate. It has the perfect marbling to ensure the best eating.

Is it hard to encourage people to eat lamb in Miami?
It's been pretty easy, to be honest. While it may not be the first protein of choice for Miamians, they are keen to try something

new. We have received rave reviews on the different ways we feature lamb. Chops are usually the go-to dish, but when we put a lamb burger on our menu people go wild for it. Tacos are popular too, plus slow-braised lamb shoulder in a soft tortilla.

What is your favourite way to use Australian lamb?
Growing up we would gather for a roast leg of lamb every Sunday. These days I also enjoy braising a well-marbled shoulder of lamb with the bone in. I have to say, though, my favourite way to eat lamb is simply grilled.

How do you promote Australian lamb?
I've always 'menued' Aussie lamb so representation has always been there for our guests. Outside that, I was lucky enough to be part of two lamb immersions with Miami's top chefs, educating the audience on the benefits of the product. I've also represented MLA at the Culinary Institute of America in Napa in front of industry professionals, which was a blast. Social media, radio and television have also been part of the initiative.

www.fourseasons.com/Miami

Vania adds dash of glamour

Celebrity chef and Indonesian social media personality Vania Wibisono (pictured below) has been MLA Indonesia's Family Ambassador since 2013.

Vania has thousands of followers on social media and appears on eight different television cooking programs.

The self-described "chef, mum, food activist and free soul" was chosen as an MLA ambassador for her connection to mothers and young, social media-savvy consumers.

What do you love about Australian beef and lamb?
It is naturally tender and practical to use and there are a wide range of cuts to be chosen.

What is your favourite way to use Australian beef and lamb?
As a roast, with homemade bread and sides, and as stir fry. I also use mince for home cooking and cooking demonstrations. Minced True Aussie beef is very versatile for creating daily meals.

Why did you agree to be an MLA ambassador?
I strongly agree with MLA Indonesia's vision to educate mums on the importance of beef to fulfil nutrition required for kids and all family members. As a chef I constantly use Australian beef for my dishes, due to its quality and versatility.

What food trends are you seeing and how could Australian beef and lamb fit into those?
The fusion food trend is growing, especially in Jakarta. Asian and Western fusion dishes are the new trend.

The rise of local Indonesian food is also quite strong, from local street-style snacks (kue cubit, martabak, etc) to internationally known dishes such as beef rendang.

True Aussie beef is needed to support this local food trend and develop high quality, beef-based food, such as beef rendang. This is especially true if we are going to introduce these kinds of dishes worldwide.

Follow Vania on Facebook:
www.facebook.com/ChefVaniaWibisono

Ambassadors

Lamb lures Andy

High-profile US chef Andy Husbands (pictured) , owns two successful restaurants in Boston, has written four recipe books and is a world-champion barbecue cook.

He signed on as an official MLA 'Lambassador' because Aussie lamb ticks all his boxes for flavour, sustainability and price. In his role, Andy has hosted dinners, led special events, such as seminars for chefs, included lamb recipes in his books and promoted lamb on social media.

Where do you work and what does your role involve? I own Tremont 647 and Sister Sorel, in Boston's South End, and am opening The Smoke Shop in Kendall Square, Cambridge, Massachusetts. I am chef/partner and I am heavily involved in all of the food and hospitality aspects.

What do you love about Australian lamb? Flavour is number one, then we look at how it's raised and handled and, finally, price. All of these aspects make Australian lamb perfect for us.

What food trends are you seeing and how could Australian lamb fit into those? People want to know animals have been raised naturally and humanely, and these are the strong points of Australian lamb.

What is your favourite way to use Australian lamb? We love making lamb pastrami with the legs. It's a four-day process of curing, smoking and roasting.

www.tremont647.com

Aiming high in world's top food city

Tokyo is one of the world's most fashionable cities. It has the most Michelin-starred restaurants of any city in the world and is considered by many to be the greatest food city. With the goal of making lamb more fashionable in Tokyo, MLA recently launched Japan's first 'Lambassador' program.

MLA's Japan business manager Andrew Cox said the initiative began by approaching nine food industry leaders to be Lambassadors.

"In this group there are five chefs – across a spectrum of classic French, modern French, bistro, Chinese and modern Australian – a butcher/lamb smallgoods specialist, two food stylists/media personalities and even the president of the 1,000-member Japan Sheepmeat Lovers' Association," Andrew said.

"Our first step, in March, was to educate and inspire the Lambassadors by bringing them to Australia to learn from some trendsetting Australian chefs and visit a sheep property. This led to our media launch in April.

"The next step has been to run a series of events hosted by the Lambassadors themselves, allowing them to showcase their skills and passion to other chefs, consumers and media."

Andrew said the final step in the campaign would be the publication of a lamb inspiration guide, with recipes from the Lambassadors, which will be printed and distributed to chefs across Japan.

Andrew Cox, MLA
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MLA Japan's Lambassadors. Front, from left: Marie Inoue (food stylist), Tomoyuki Kezuka (hotel fine dining chef), Ryo Housho (Chinese restaurant owner) and Hideyo Ishii (food consultant/olive oil sommelier). Back, from left: Koji Fukuda (modern Australian chef), Moriaki Higashizawa (butcher and A+ Australian Wine Specialist), Masafumi Irie (French bistro chef), Kazuhiro Kikuchi (president, Sheepmeat Eating Association) and Naoya Kobayashi (French fusion chef).

Recipes

The season for lamb

Spring has sprung and that means its time to enjoy lamb. Here are three new ways of preparing traditional cuts.

Chargrilled lamb loin chops with rosemary dressing

Serves: 4 // Preparation time: 15 mins
Cooking time: 8 mins, plus resting time

Ingredients

8 lamb loin chops, trimmed

3 tbsp olive oil

6 anchovies in oil, drained and roughly chopped

1½ tbsp rosemary leaves, roughly chopped

zest of 1 lemon

1 red chilli, roughly chopped (optional)

400g mixed tomatoes, sliced

½ small red onion, finely sliced

2 tsp white wine vinegar

Method

1. Preheat a ridged chargrill to moderately high. Brush the lamb with one tbsp olive oil and season with salt and pepper. Cook for four minutes on each side or to your liking. Cover and set aside to rest for five minutes.
2. Meanwhile, pound the anchovies, rosemary, lemon zest and chilli (if using) in a mortar and pestle into a thick paste. Slowly pound in one tbsp of olive oil.
3. Mix the tomatoes, red onion and vinegar with the remaining oil and stir to coat. Season with salt and pepper
4. Serve the lamb with the pounded dressing spooned on top and the tomato salad on the side.

Roasted lamb rump with freekah, almond and pomegranate salad

Serves: 4 // Preparation time: 20 mins
Cooking time: 15 mins, plus resting time

Ingredients

600g lamb rump, trimmed

2 tsp Dijon mustard, plus extra to serve

Freekah salad:

2½ cups cooked freekah*

2 tbsp roasted almonds, chopped

½ cup pomegranate seeds

1 cup flat leaf parsley leaves, roughly chopped

1 tbsp olive oil

2 tsp pomegranate molasses**

**Freekah is a Middle Eastern dried and roasted green wheat, available from supermarkets or delis. Cook according to instructions on the packet.*
***Pomegranate molasses is a reduced pomegranate syrup, available from supermarkets.*

Method

1. Preheat the oven to 180°C. Place a frying pan over a moderately high heat. Rub the lamb with some olive oil and season with salt and pepper. Sear for eight minutes or until nicely browned all over. Rub with mustard and transfer to an oven tray. Roast for 12-15 minutes or to your liking. Set aside to rest for five to 10 minutes, loosely covering with foil.
2. Slice the rested lamb and serve with the freekah salad and a dollop of Dijon mustard.

For the freekah salad:

Mix the cooked freekah with the almonds, pomegranate seeds and parsley. Season with salt and pepper and dress with the olive oil and pomegranate molasses.

Spiced lamb and mint meatballs with lemon yoghurt

Serves: 4 // Preparation time: 15 mins
Cooking time: 8 mins

Ingredients

600g lean lamb mince

Zest of 1, and juice of ½ a lemon

½ cup mint leaves, chopped

1 tsp ground cumin

1 tsp ground coriander

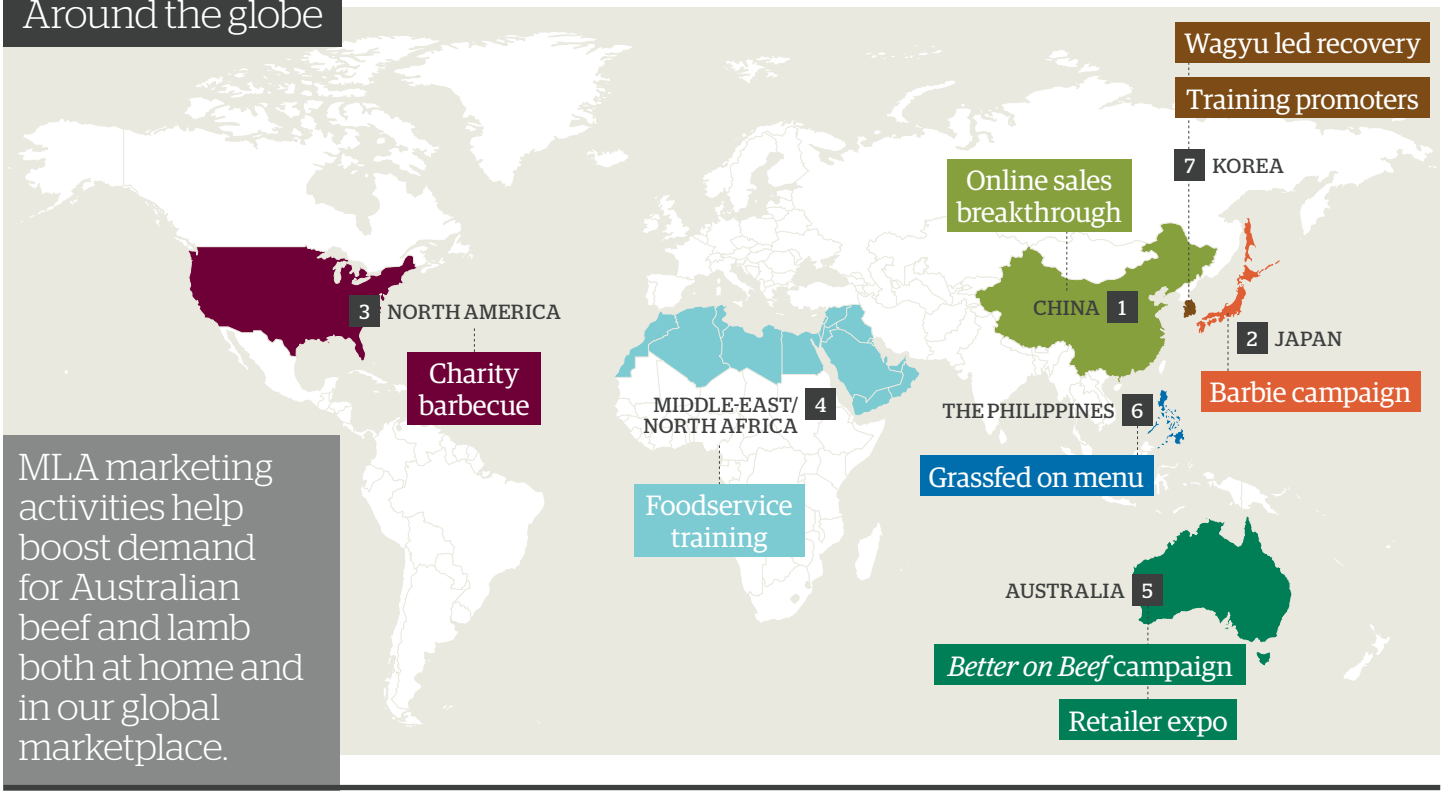
1 cup Greek yoghurt

Grilled lemon wedges, baked potatoes and spinach or chard, to serve

Method

1. Mix the lamb with the lemon zest, mint, cumin and coriander and season with salt and pepper. Roll into meatballs roughly the size of a walnut.
2. Mix the yoghurt and lemon juice together and season with salt and pepper.
3. Preheat a large, lidded frying pan over a moderate heat. Gently roll the meatballs in some olive oil and cook for four minutes or until nicely browned. Cover with a lid, reduce the heat to low and cook for four minutes or until cooked through.
4. Serve the meatballs with the lemon yoghurt, grilled lemon wedges, baked potatoes and sautéed spinach or chard.

Around the globe



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

1 CHINA

Massive online market opens up

Australian chilled beef will be sold online into China from mid-September via a company with 38.1 million registered customers.

Export meat marketer Sanger, with the support of MLA's CoMarketing Program, has been working to secure the contract with popular shopping site JD.com.

JD.com processes 163.7 million orders annually and has 97 warehouses in 39 cities and 24,412 delivery staff across China.

38.1 million
Chinese customers now have access to chilled Aussie beef online

2 JAPAN

Bringing back the barbie

Australian beef promotions have been reinvigorated in Japan with a multi-faceted "Let's Barbie" campaign in July and August.

14 July was declared Barbie Day and 50 media representatives attended an event at the Australian Embassy, which included a Barbie Day Certification Ceremony and the launch of a steak cooking app called Barbie Mate.

"Let's Barbie" advertisements were run on national and local television stations, along with billboard advertising in Tokyo and Osaka, print advertisements in magazines and posters displayed in barbecue areas. Retailers, including steak restaurants, were given posters and stickers for in-store promotions.

Check out MLA's International Business Manager Andrew Cox explaining the campaign at: www.mla.com.au/News-and-events/Industry-news/Global-marketing-update-video-diary-from-Japan

70 million
people targeted with "Let's Barbie" television advertising

3 NORTH AMERICA

Barbecuing in Boston

Chefs were targeted when MLA kicked off the barbecue season with the 'Great Aussie Steakout' at the Catalyst restaurant in Cambridge, a suburb in Boston.

Chefs William Kovel from Catalyst, Ryan Marcoux from Boston Chops, Matthew Gaudet from West Bridge, Renee Scharoff from Blonde on the Run Catering, and Eric Kinniburgh from Boloco were on the grills where games and beers were offered alongside Australian beef and lamb. Funds raised went to the ALS Therapy Development Institute, dedicated to ending Lou Gehrig's disease.

4 MIDDLE-EAST/ NORTH AFRICA

Upskilling in the UAE

Meat scientist Dr Peter McGilchrist travelled to Dubai to help Master Chef Tarek Ibrahim educate culinary students and food industry professionals on the Australian beef and lamb supply chain, correct cooking methods for different cuts of meat and butchery and cutting skills.

MLA partnered with the International Centre for Culinary Arts (ICCA) for the first in a series of seminars delivered its first educational seminars at the ICCA facilities in Dubai on 3-4 August 2015. Director and CEO of ICCA Dubai, Sunjeh Raja, said the initiative would go a long way to help develop better knowledge and understanding of meat and its right cuts, for quality and cost-efficient use, while also enabling professional development and improve performance and growth within the hospitality industry in the UAE.

5 AUSTRALIA

Badger built on beef

The Honey Badger has struck again. In the latest instalment of the "You're Better on Beef" campaign, rugby union player

Nick "Honey Badger" Cummins has showcased the role beef played in helping his dad overcome the trials and tribulations of raising eight energetic kids in the 1980s, often on his own.

Honey Badger's home video is part of a broader campaign, which includes television activity on Channel 7 and Channel 10, national radio on the KISS and WSFM networks, posters in close proximity to key retailers and butchers in shopping centres throughout Australia, digital panels in key high traffic locations, national online video activity and a PR partnership with leading national network Mamamia.

All the way with IGA

More than 2,500 people and 250 retailers now have a better understanding of the versatility of spring lamb and summer beef following MLA presentations at the annual Metcash expo on the Gold Coast. Retailers were invited to an MLA-hosted event during the expo and they sampled dishes of chimichurri beef rump and Mediterranean lamb with cous cous and mango chutney and entered a competition to win one of three $5,000 beef and lamb marketing packages linked to IGA stores.

6 THE PHILIPPINES

Going with grassfed

Thirty-seven of Manila's top restaurants featured Victorian produced grassfed beef on their menus for a month long promotion. MLA worked with Austrade and the Victorian Government to hold a competition during the promotion, with diners at participating restaurants having chance to win a trip to Australia.

7 KOREA

Wagyu to lure diners

Korean family restaurant franchise T.G.I. Fridays is offering five different Australian Wagyu steak dishes on their menus for a year, in an effort to attract more families hesitant to dine out due to the economic downturn in Korea. MLA trained the restaurant staff on handling and cooking the different Wagyu cuts and the Darling Downs-sourced steaks are now available in 37 stores nationally.

Talking shop

Thirty Australian beef promoters in Korea recently enjoyed a cooking class and demonstration to improve their sampling promotions with consumers. With in-store sampling being a very successful sales activity with Korean shoppers, a professional instructor provided step-by-step instructions on how to cook perfect beef samples for in-store sampling with easy, versatile recipes. MLA also provided education and communication skills on the *True Aussie Beef* logo and how the brand is used in stores.

On the ground

European Union

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International Business Manager
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The EU is Australia's highest value export market on a per tonne basis for beef, with shipments averaging $11,270/tonne, up 11% year-on-year.

The majority of beef and lamb is purchased by foodservice and catering companies seeking consistent products.

Despite the major points of entry being Italy, the Netherlands and England, Australian beef and lamb is distributed throughout much of Europe depending on specific requirements and cuts. It enjoys consistent demand from countries that have a strong restaurant culture and higher disposable incomes, with countries such as Switzerland, Denmark, the Netherlands, UK and Germany continuing to pay premiums for high quality beef and lamb.

There is a strong willingness from importers within Europe to promote Australia's high quality red meat products. MLA is able to leverage off this desire by supporting a wide range of activities aimed at growing loyalty and delivering increasing value. In market supply chain education, training and development, activities have targeted chef and foodservice groups to educate and promote brand Australia and raise awareness of Australian red meat in Europe.

Current access to the EU is restricted by low import quotas and high above quota tariffs. Importing Australian beef and lamb outside these quotas, for the large majority, is not economically viable. Therefore the volume potential within the market will be limited for the short-term.

MLA supports the Australian Government and industry in efforts to gain greater access across Europe. The EU - Australia Framework Agreement was concluded on 22 April 2015, and is widely seen as a positive step. The Agreement outlines the relationship between the EU and Australia as like-minded partners, and aims to expand the existing partnership to a new strategic level.

The treaty will advance cooperation on economic and trade matters, foreign and security policy and research and innovation. Importantly, the treaty will help boost growth, prosperity and jobs through efforts that reduce barriers to commerce.

Figure 1 Australian beef exports and domestic consumption*

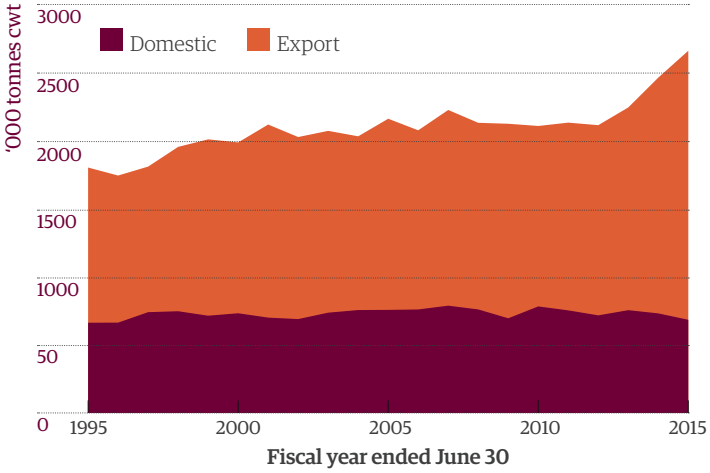
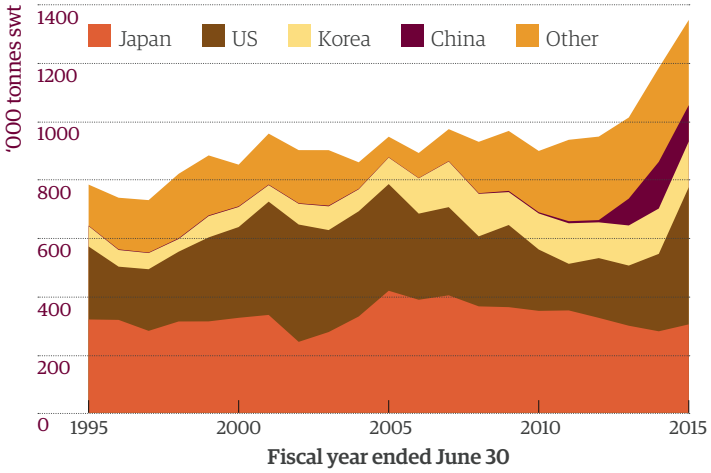


Figure 2 Australian beef exports



*Figures 1, 3 and 4 - Source: Australian Bureau of Statistics, Department of Agriculture, MLA calculations // * Consumption is calculated as production less exports*

Figures 2, 5 and 6 - Source: Department of Agriculture

The changing face of Australian markets

In the past 20 years, Australia's beef and lamb industry has evolved to become increasingly export focused. That evolution looks set to continue. Here we examine the push and pull factors that impact on markets.

Australia's cattle and lamb industries are being impacted by three major forces in 2015 – declining domestic consumption, increased production and growing global demand.

Domestic market

Domestic consumption in Australia is forecast to account for 24% of total Australian beef and veal production this year, leaving 76% for export. Declining domestic demand is expected to continue in the next few years, with the forecast of lower slaughter and production over the period.

Despite this, Australia will remain the most valuable market for Australian beef and the main market for loin cuts.

Beef consumed by the Australian market is expected to decline 8% year-on-year in 2015, to around 611,000 tonnes cwt, and as a result, per capita consumption is forecast to decline 9% year-on-year to 25.7 kg/head. This is a common trend in many developed countries, such as the US and in Europe.

Declining domestic consumption and increasing export demand is impacting the lamb industry. This year an estimated 41% of total Australian lamb production to be consumed domestically, while 59% is forecast to be exported.

Domestic lamb consumption is forecast to decline 3% year-on-year in 2015, to 200,000 tonnes cwt, resulting in per capita consumption declining 3% to 8.5kg. The forecasted increased production of lamb, through to 2020, is likely to be directed straight to international markets.

MLA's Sheep Industry Projections (July update) forecast lamb export volumes for 2015 to be 6% higher year-on-year, at 250,000 tonnes swt, while mutton shipments are forecast to decline 24%, to 142,000 tonnes swt.

With the population growing by 32% since 1995 but beef and lamb production increasing 48% and 89%, respectively, it is no wonder we continue to see more and more red meat head to the export market.

Figures 1 and 3 illustrate how domestic beef and lamb consumption has remained steady while total exports have continued to grow.

Beef exports

In 2014-15, Australian beef and veal exports increased 14% year-on-year, to a record 1.35 million tonnes swt – a trade worth more than $9 billion. Supporting exports was the 8% year-on-year increase in production, at 2.66 million tonnes cwt, driven by sustained drought induced cattle slaughter, along with strong demand from Australia's three major markets – the US, Japan and Korea.

The US, the largest beef producer in the world, is a huge driver of the global beef market and is Australia's largest customer and competitor (in Japan and Korea). Fortunately, with tight cattle and beef supplies, the US has increased its volumes of imported beef and decreased the amount of product shipped onto the export market – both of which have worked in Australia's favour. Similarly, the falling A$, now at a six-year low, has continued to make Australian product more competitive on the international market while putting the US at a disadvantage.

Primarily lean manufacturing beef, Australian exports to the US lifted 77% year-on-year in 2014-15, to a record 471,242 tonnes swt – and while the majority was made up of frozen grassfed beef (381,272 tonnes swt), there was a surge in chilled grassfed product, increasing 72% year-on-year, to 76,282 tonnes swt.

Australian exports to Japan were also greater (9%) than the year before, at 303,519 tonnes swt, underpinned by a 24% rise in grainfed shipments – which accounted for just under half the total, at 143,686 tonnes swt.

Figure 3 Australian lamb exports and domestic consumption*

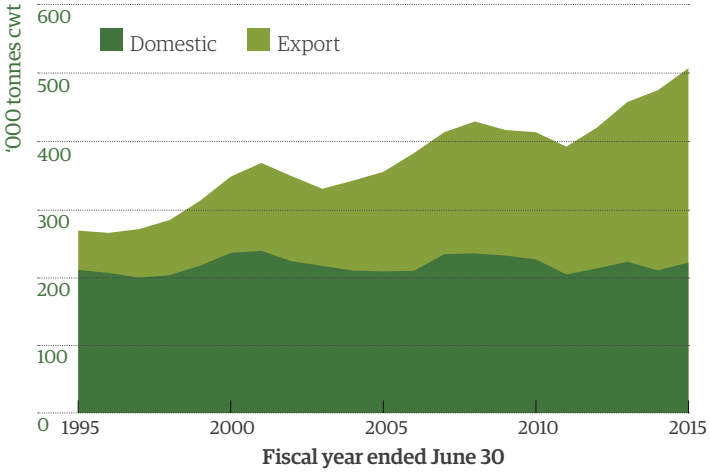


Figure 4 Australian mutton exports and domestic consumption*

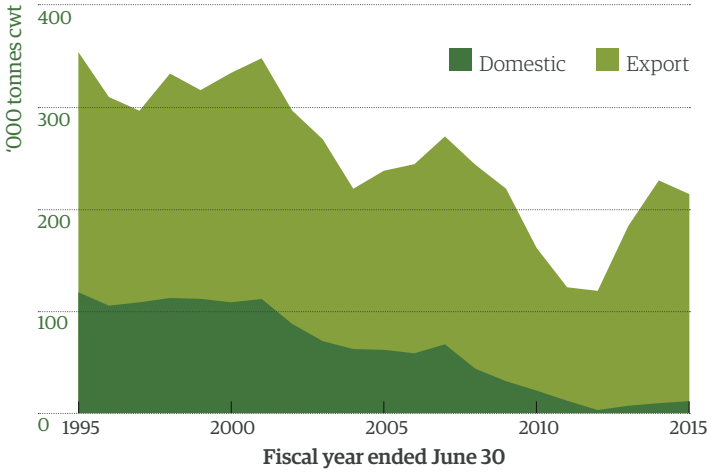


Figure 5 Australian lamb exports

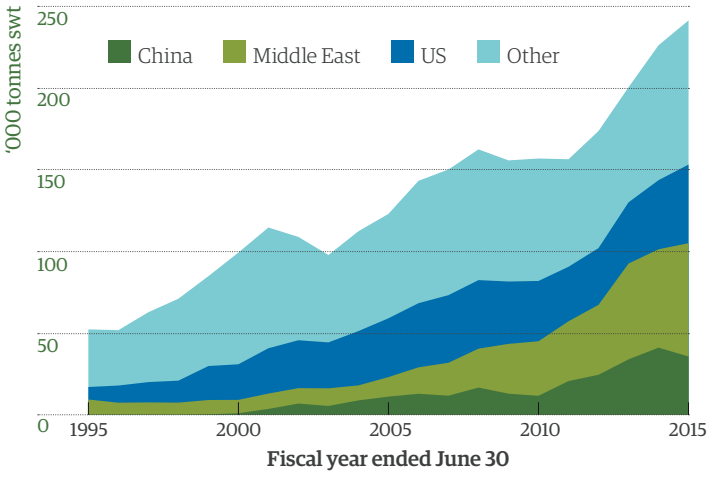
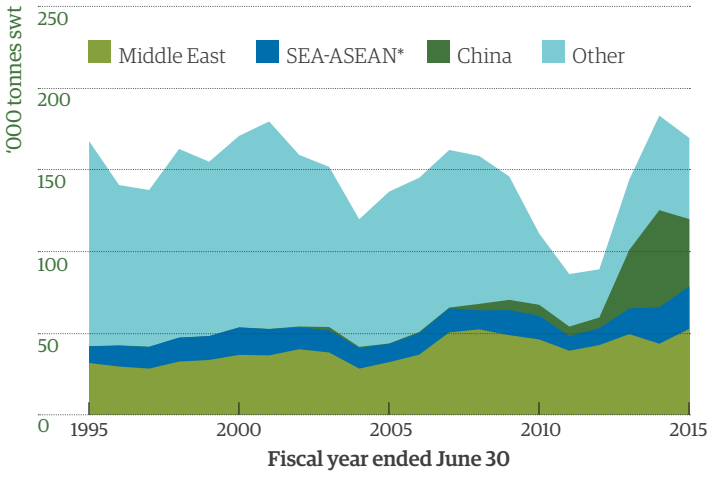


Figure 6 Australian mutton exports



** South East Asia - Association of South East Asian Nations*

There was also some modest growth (1% year-on-year) in the volume of beef shipped to Korea, at 156,915 tonnes swt and like Japan, exports were buoyed by a relatively substantial increase (11% year-on-year) in grainfed exports, at 37,454 tonnes swt.

While the volume of Australian beef exported to China (124,820 tonnes swt) in 2014-15 was down 22% year-on-year, it must be viewed in context with where the market has grown from, with shipments for the year 129% above the five-year average. The majority (111,698 tonnes swt) was made up by grassfed beef.

For the remainder of 2015, the strong demand momentum is only likely to slow a small amount, if at all. MLA's *Australian Cattle Industry Projections* (Q3 Update) forecast export volumes for 2015 (calendar year) to be 2% higher than the 2014 record, at 1.32 million tonnes swt – the US will comfortably be the largest market again this year.

Lamb and mutton exports

Lamb production, in 2014-15, increased 7% year-on-year, to a record 507,000 tonnes cwt.

Lamb exports followed suit, lifting 7% to 242,000 tonnes swt. Following what was historically high lamb slaughter in 2013-14, the large number of lambs that continued to enter the market – during the latter half of 2014-15 in particular – indicates a considerable improvement in lamb marking rates in recent years.

The Middle East was again Australia's largest lamb export market in 2014-15, taking 69,374 tonnes swt (up 15% year-on-year), followed by the US, at 48,153 head (up 14%). Following unprecedented exports in 2013-14, exports to China slipped 13% last year, to 35,737 tonnes swt, as a result of high volumes reported in cold stores.

Australian mutton exports reached 169,492 tonnes swt in 2014-15 – back 7% from the previous year's record high, which was driven by elevated slaughter. Nevertheless, the 2014-15 volume was still considerably higher (38%) than the five-year average (122,724 tonnes swt).

MLA's Sheep Industry Projections forecast lamb export volumes for 2015 to be 6% higher year-on-year, at 250,000 tonnes swt, while mutton shipments are forecast to decline 24%, to 142,000 tonnes swt.

Read the latest projections at:
www.mla.com.au/Prices-markets/Trends-analysis

Indonesia//Supply chain tour

Six northern cattle producers recently visited Indonesia on an MLA-LiveCorp supported tour to learn about the supply chain.

Greg and Allison Dakin from the Northern Territory, Ross and Natalie Olive from Queensland and Ben Millis and Caitlin U'ren from Western Australia won the prize after filling out surveys at Beef Australia.

Tour highlights included:

- → visiting wet markets and seeing the dynamics of Indonesia's 'fresh supplies', where fresh meat is sourced from the previous night's slaughtering process
- → finding Australian boxed beef for sale in a high-end supermarket. They learnt that boxed beef imported to Indonesia is more for the consumption of hotels, catering companies and restaurants
- → inspecting three feedlots in Lampung, Sumatra and in West Java
- → touring the Elders abattoir in West Java, one of the many modern abattoirs in Indonesia that produce their own frozen and chilled meat and the TUM abattoir in West Java, a well-engineered ESCAS abattoir that ranked number one in its class for cleanliness.

Rashelle Levonian, MLA
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Above: Getting ready for day one's visit to a wet market and supermarket. Below: Visiting Ranch Market and finding Australian boxed beef on display.

At the Great Giant Livestock Co Feedlot in Lampung.

Above left: At the Juang Jaya Abdi Alam Feedlot in Lampung. Above right: Talking with Elders' Indonesia Feedlot Manager about their feed mix.

Upcoming events

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

MLA AGM and Producer Forum

At MLA's AGM and Producer Forum, the MLA Chair and Managing Director will present an update on the company over the past financial year. The Producer Forum will provide members with the opportunity to gain a greater understanding of the activities that the company is involved in and the opportunities that exist for their business, and a chance to ask questions.

When and where: 10 November 2015 at Mercure Brisbane, 85–87 North Quay, Brisbane, Queensland

More information:
www.mla.com.au/agm

2015 LIVEXchange conference

World-renowned livestock handling expert Dr Temple Grandin will tour Australia and Indonesia in November to examine the livestock export cattle industry and give a keynote address. Fellow keynote speaker Dr Bernard Vallat will provide a global perspective on animal welfare and the challenges being faced. A wide range of speakers, trade displays and panel discussions will attend including a producer forum, where the proposed Livestock Global Assurance Program will also be outlined.

When and where: 25–26 November 2015, Darwin, NT

Bookings and information:
www.livexchangeconference.com.au

Wagga Wagga and Brisbane// Intercollegiate Meat Judging

Reuben Welke is a third-year veterinary science student at Perth's Murdoch University. With his eye on specialising in cattle, Reuben saw an opportunity to develop his skills through the MLA-supported Intercollegiate Meat Judging (ICMJ) program.

Earlier this year Reuben spent a week in Wagga Wagga, NSW, for the ICMJ program and competition, where he was runner up in the beef judging and made it into the top 10 overall team, which then went on to compete in Brisbane in late August. Reuben was then named in the Australian team, along with Jess McGrath from Charles Sturt University (CSU) and Sydney University students Anna White, Georgia Clark and Simon Kensit.

"To be a good production animal vet you must understand what the industry and ultimately what consumers want, as then you're placed in a much better position to work with the producer on the required product," he said.

"After the first information and training session at ICMJ I realised I'd made the correct decision and ICMJ was, firstly, going to provide so much knowledge about the animal post-slaughter and the supply chains and, secondly, provide invaluable industry networking."

Here's Reuben's diary from his week in southern NSW with ICMJ

Day 1: Flew from Perth to Melbourne and drove to Wangaratta, Victoria.

Day 2: Visited Lambpro, Tom Bull's sheep genetics business at Holbrook and then on to Wagga for a beef training session at processor Teys Australia, then a retail and sheep carcase training session at Knight's Meats. *Learning:* How to polish up the skills needed for the competition.

Day 3: Toured Ashleigh Park feedlot at Culcairn and Rennylea Angus with Ruth Corrigan. Back in Wagga Wagga that evening for the first ICMJ function – the 'rotational grazing' dinner. *Learning:* The differences between eastern and western production systems and getting to know the fellow competitors.

Day 4: The official opening of the 2015 ICMJ program. The morning session included presentations from industry representatives. The afternoon session was a rotating series of workshops to learn what butchering is all about and the importance of yield with two demonstrations (lamb and pork) and then an eating quality workshop and dinner. *Learning:* Great to see how a carcase goes from complete to full retail cuts in 20 minutes.

Day 5: Following a morning of industry representative presentations, we worked through group training sessions on retail cuts and lamb and pork carcases. *Learning:* The future for the red meat industry is positive.

Day 6: Careers Expo and the small stock competition (lamb and pork classes). A careers expo of almost 20 companies was accompanied by professional development workshops preparing us for getting into the workforce. *Learning:* There are a lot of career options in the livestock sector.

Day 7: An early start at Teys Australia for the beef judging. There were nine classes, ranging from primal identification to an MSA grading class. The top 15 then had to go back to judge and verbally present a final class to differentiate the top 10 students. That night was the Coles Awards dinner, where all the team and individual categories were awarded. *Learning:* That the whole week had been fantastic and I was lucky to have the opportunity.

In August, Reuben and four fellow ICMJ students were chosen to travel to the US (January 2016) to represent Australia and compete in up to three American meat judging competitions.
From L–R: Reuben Welke – Murdoch University, Anna White – Sydney University, Georgia Clark – Sydney University, Jessica McGrath – CSU Wagga Wagga and Simon Kensit – Sydney University.

Reuben Welke of Murdoch University assessing ossification on a beef carcase during the beef judging at Teys Australia.

Students judging beef primals for quality and yield attributes.

Angus Knight assessing the eye muscle of a beef carcase.

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www.icmj.com.au

MLA IS YOUR COMPANY
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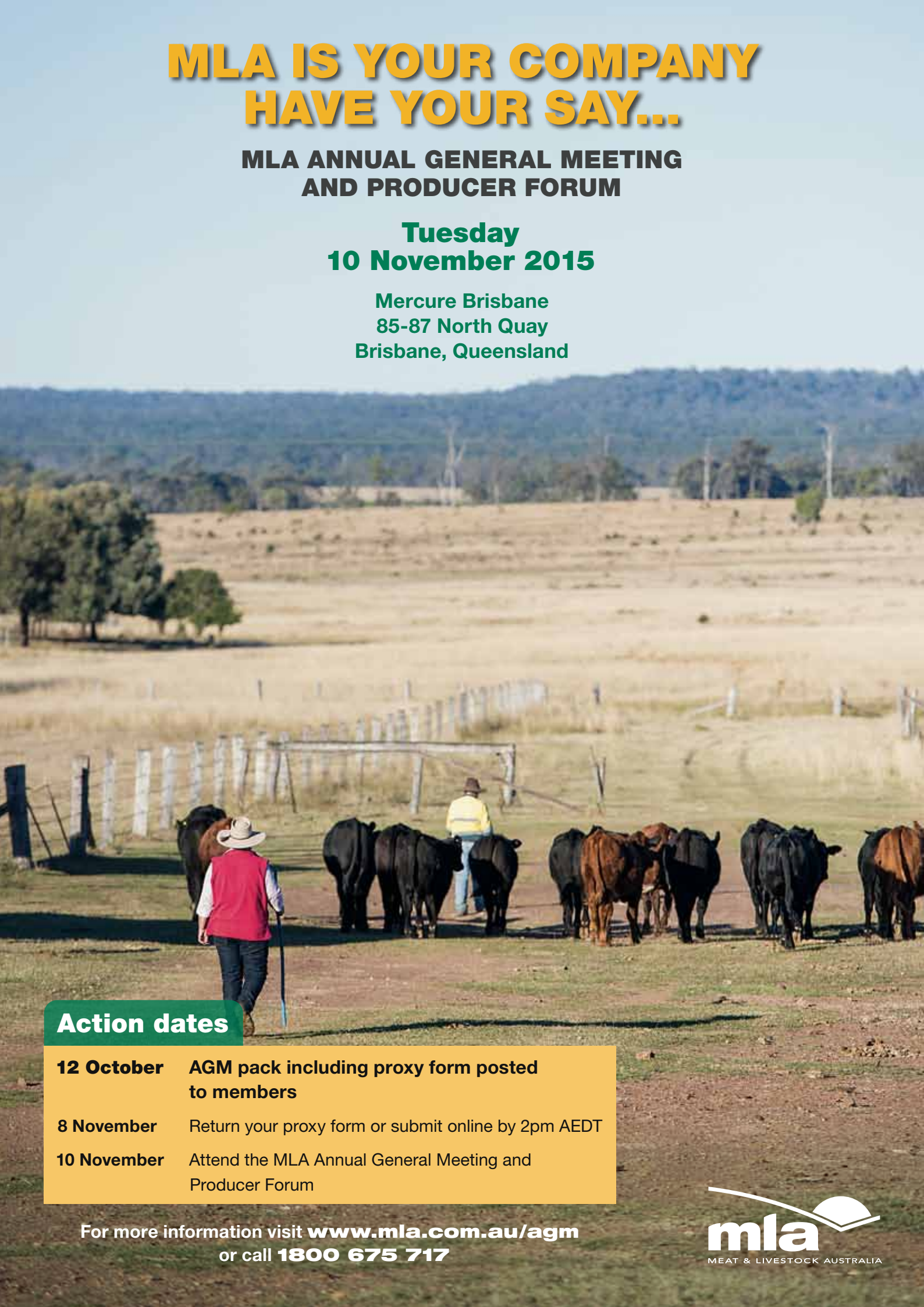
MLA ANNUAL GENERAL MEETING AND PRODUCER FORUM

Tuesday
10 November 2015

Mercure Brisbane
85-87 North Quay
Brisbane, Queensland



Action dates

12 October	**AGM pack including proxy form posted to members**
8 November	Return your proxy form or submit online by 2pm AEDT
10 November	Attend the MLA Annual General Meeting and Producer Forum

For more information visit **www.mla.com.au/agm**
or call **1800 675 717**

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