Full coverage of BEEF AUSTRALIA 2018

FEEDBACK

MLA – FOSTERING PROSPERITY

JUNE/JULY 2018

mla
MEAT & LIVESTOCK AUSTRALIA

FEEDBACK

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

Cover: *MLA Business Manager Foodservice and Corporate Chef Sam Burke and MSA Retail Training Facilitator Kelly Payne serve it up at Beef Australia 2018. (Page 5)*
Image: Lisa Hatzimihail.

Have your say!

We'd love to hear from you

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Welcome to our Beef Australia 2018 special edition of *Feedback*.

This year's event drew a record crowd, with more than 100,000 visitors from across Australia and the globe pouring into Rockhampton to experience 'Australian Beef: the Greatest.'

Beef Australia presents unrivalled opportunities for industry to showcase the diversity, versatility and eating quality of our nation's most-loved protein.

MLA is proud to have been a principal partner of the event, especially with 2018 being a milestone year. It was the 30th anniversary of the expo and the 20th anniversary of MLA. MLA's program focused strongly on fostering beef's prosperity from the consumer's fork right back to the farm gate. Our 'Fork to Farm' seminar emphasised the importance of putting the consumer first, and demonstrated how the supply chain can adapt to meet consumer demands and remain competitive in the global market.

Another consumer-driven activity in MLA's program included the 'Paddock to Plate Story', where visitors used innovative 360° immersive technology to learn the story of Australian beef production.

MLA's 'Culinary Showcase' brought internationally-renowned chef Curtis Stone to Rockhampton, as well as our own celebrity chefs Sam Burke and Tarek Ibrahim, to reinforce the importance of beef's superiority – not only in taste and versatility, but also traceability. Australian red meat's integrity systems are world-leading, and it's our industry's influencers – our celebrity chefs – who help promote this message to consumers. Head to page 5 to see how MLA is encouraging foodservice industry customers to utilise the lesser-known cuts in their cooking.

Growing demand for Australian beef is one of MLA's top priorities. Our industry operates in a global marketplace and, for the first time, we hosted our Global Markets Forum at Beef Australia. Here, our International Business Managers provided exclusive insights into consumer trends across the key international markets in which they're based and discussed the major challenges and opportunities for Australian beef.

Major industry events such as Beef Australia 2018 are undoubtedly a powerful platform for networking, informing and engaging with people from across the Australian red meat and livestock industry. There are more to come in 2018.

From 5–7 August, MLA will be at LambEx in Perth, then on 20–23 November, we'll be holding our own flagship event, Red Meat 2018, in Canberra. It's set to be another jam-packed program, including producer tours, a showcase of the latest innovations and more.

For me, meeting with producers like you has always been one of the most important aspects of these events. If I didn't get to catch up with you at Beef Australia, there will be plenty of opportunity at LambEx, Red Meat 2018 or any of the other hundreds of events MLA supports each year. ■

Richard Norton
MLA Managing Director
E: managingdirector@mla.com.au

CONTENTS

All the action from Beef Australia 2018

Driving productivity and profitability in the Australian beef industry was the focus of MLA seminars at Beef Australia 2018.

Global insights

Some 200 beef producers and industry stakeholders attended MLA's Global Markets Forum where our International Business Managers provided detailed insights into international markets.

MLA General Manager – International Markets Michael Finucan spoke about the challenges and opportunities for Australian beef globally, and MLA's global markets strategy.

He cited growing competition from South America, India and the United States as a threat, while other challenges included protectionism, particularly in the US market access and changing consumer demands.

"South American and Indian product continues to gain market access and continues to enter our key markets, particularly in South-East Asia," Michael said.

"We have to watch our competitors – they're getting better at what they do and getting better at telling their stories.

"In the US, our traditional competitor, production is significantly increasing. We're expecting to see more beef come out of the US and that product typically hits two of our most important markets: Japan and Korea."

On the upside

However, according to Michael, opportunities remain.

"Australia has had some great success in recent free trade agreements with Japan, Korea and China, and in the Trans-Pacific Partnership. These agreements give us significant advantages," he said.

"The US economy is tracking well, and that's a good thing for us, because the stronger the US economy, the more money people have in their pockets to buy and eat their own beef. But it also means they'll need Australian beef."

Michael said the growing middle class in Asia presented opportunity, with the number of households in South-East Asia earning more than US$35,000 expected to double in the next four to five years.

From research to reality

MLA's 'Fostering beef's prosperity: fork to farm' seminar also attracted a full house, with attendees hearing from 'best in their field' speakers on innovation and marketing insights.

MLA Project Manager – Animal Health, Welfare and Biosecurity Dr Johann Schröder discussed MLA's investment to tackle the biggest impost to profitable beef production in the northern beef herd – parasites, including cattle tick and buffalo fly.

"These parasites in combination were estimated in 2015 to cost the northern beef industry $330 million," he said.

Johann said microbes – germs, viruses and bacteria – such as pestivirus, three-day sickness, botulism and vibriosis, had cost the northern beef industry $150 million in 2015.

Getting into genetics

MLA General Manager – Producer Consultation and Adoption Michael Crowley outlined progress on the National Livestock Genetics Consortium and a vision for the red meat value chain of 2025.

Irish Cattle Breeding Federation Technical Director Dr Andrew Cromie discussed the genetic and productivity gains achieved by the Irish cattle industry through the establishment of a central data platform for all cattle breeds.

The Federation services 100,000 Irish cattle producers, with the platform producing terminal and replacement indexes.

The terminal index is the genetic merit rating to describe an animal's genetic ability to be finished, as an indicator of productivity and profitability.

The replacement index comprises traits including fertility, meat, feed intake, milk, calving data and docility.

"Our terminal index has increased over the past 15 years, by 70 Euros per animal slaughtered, or 580 million Euros in total to our cattle farmers," Andrew said.

He said among the many other benefits from the central data platform was the ability to run large-scale genomics programs, attracting investment from government and stakeholders. ■

beefaustralia2018.mla.com.au

Michael Finucan

Michael Crowley

Andrew Cromie

BEEF AUSTRALIA 2018 ROCKHAMPTON

A flavour-filled occasion

Celebrating beef's diverse offering, including the 'hidden gems' of the beef carcase, was the main role of MLA's chefs and butchers at Beef Australia 2018.

Lesser-known cuts were showcased by some of the biggest names in the culinary world including internationally-renowned chef Curtis Stone, who attended the event with MLA support.

Curtis, who has his own butcher shop and restaurant in Los Angeles and is a beef importer, championed whole-carcase utilisation in his demonstrations.

"From a chef's perspective, the more tender cuts are the easiest ones to cook – unfortunately, they don't have as much flavour," Curtis said.

"The ones with all the flavour are the tougher cuts to cook. Brisket, chuck, ox tail, tongue, cheeks: all the stuff that doesn't get as much airtime but eats brilliantly when it's cooked right – whether that's smoking, braising or stewing or whatever it may be."

Secondary goes first class

At the Beef Australia PwC Celebrity Chef Restaurant, MLA Business Manager Foodservice and Corporate Chef Sam Burke led a team of chefs who served up non-primal cuts, including a lunch of Wagyu and Black Angus from Jack's Creek.

"It's all about celebrating the diversity of the carcase and looking at the non-primal cuts that producers can get more value for," Sam said.

"We're using flat iron from the oyster blade and rump cap.

"Australian beef is the greatest product on earth. All you have to do is cook it right and serve it with light accompaniments, don't overpower it and let the beef speak for itself."

Cooking and plating up in the restaurant in front of the diners, Sam said it was an exciting and emotional event.

"My mum and dad, Ray and Margaret, came up from Sydney and they haven't seen me cook since 1996 when I was an apprentice, so this lunch was an emotional one for me," he said.

Beef with a twist

Also promoting beef's versatility was Master Chef Tarek Ibrahim, MLA's Dubai-based Corporate Executive Chef, and the face of Australian lamb and beef in the Middle East and North Africa region.

Tarek showcased dishes he has developed using what he calls "non-loin" cuts such as beef cheeks and oyster blade.

Among them was a new twist on a traditional Egyptian dish called *koshari*.

"It's usually a vegan dish, but I've added oyster blade to it. The flavour of the dish is wonderful and the meat elevates the dish even more," Tarek said.

Revealing 'hidden gems'

In the dedicated cooking and butchering precinct, The Butcher's Kitchen, MSA Retail Training Facilitator Kelly Payne continued the theme, seaming out Meat Standards Australia (MSA) graded primals for the packed room while MSA Program Manager Sarah Strachan spoke about MSA grading.

Kelly revealed the 'hidden gems' of a beef carcase, starting with a clod (blade), removing the petite tender and the oyster blade, and turning it into a flat-iron steak.

He also seamed a rump to produce a range of cuts including a rump cap and eye rump.

Attendees had the opportunity to sample the cooked product, including beef brisket bacon. ■

beefaustralia2018.mla.com.au

Check out the Beef Australia 2018 gallery at MLA's Facebook page: facebook.com/meatandlivestockaustralia

Try some of the Beef Australia recipes for yourself.

Find them at **beefandlamb.com.au**

In the field

Craig and Jessie Bethel, 'Regalo', Nebo, Queensland and Dan and Emma-Jane Burnham, 'Stonehaven', Thangool, Queensland.

Kirsty Forshaw, 'Nita Downs Station', Broome, WA, at the Global Markets Forum.

"We're all live export and currently export to Indonesia, but we're also in a blue tongue-free zone, so we see China as a potential market. We've put in some centre pivots to irrigate fodder and turn our cattle off more quickly. We need to know what's going on in a range of markets, not just Indonesia."

Kirsty

Fred and Sarah Hughes, 'Tumbar', Jericho, Queensland.

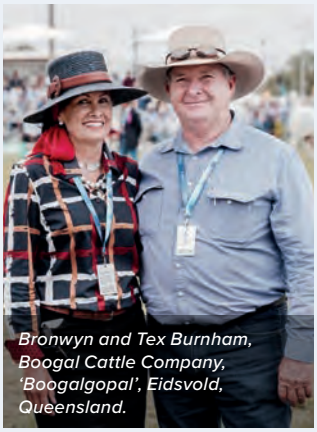
Peter Schafferius, 'Kooringal', Sarina, Queensland; his daughter, Amanda Mahy and her husband, Pete Mahy, Boggabri, NSW, at the Global Markets Forum.

"Pete and I are looking to establish a commercial Wagyu herd for F1 production with my brother Andrew and his wife, Karly. We're going to be topping up our numbers with commercial crossbred cattle. We've done plenty of research about markets for Wagyu cattle but we're here to catch up on what's going on in all the markets so we know the best market to target our crossbreds at."

Amanda

Visitors to the MLA trade site included Mary Quinn, Rockhampton, with Peter and Bev Quinn, Essex Grazing Company, Middlemount, Queensland.

Ken, Thomas and Kerry McKenzie, 'Yaralla Droughtmasters', Blackwater, Queensland, stopped by the MLA trade site after their pen of Droughtmaster–Simmental heifers won grand champion honours in the Beef Australia 2018 commercial cattle championships.



Bronwyn and Tex Burnham, Boogal Cattle Company, 'Boogalgopal', Eidsvold, Queensland.

Andrew and Sandii Leitch with sons Spencer and Carter, Rockhampton, Queensland.

Elisabeth and Ellissa Howard, 'St Albans Station', Nebo, Queensland, at the 'Fostering beef's prosperity' Fork to Farm seminar.

"We're here to get up-to-date with innovation in industry. I've been back working at home for the past 18 months so it's really interesting for me to hear what else is going on in the industry."

Elisabeth

"Whether it's hearing about the mega trends or markets, it's all relevant to the productivity of us all, regardless whether you're a small or large producer. It's important to remain up to date, and this is all first-hand information we're hearing."

Ellissa

Brigid, Rob, Owen and Issy Price, 'Hillyvale', Injune, Queensland, after experiencing the Paddock to Plate Story.

"It's a platform that really engages with people. It's telling it how it is, and it gives kids who don't have access to farms an insight into our industry. That's what we have to do as producers – share our story."

Brigid

"It's a great idea to take to cities and let kids particularly, experience it."

Owen

Brahman breeder and exhibitor Jacque Olive, Raglan Brahmans, Raglan, Queensland, leading Raglan Von, ready for judging.

The best came from the west

Bruce Campbell is congratulated by MLA's Michael Crowley.

Beef producers from Western Australia took out the top awards in the Beef Australia 2018 ANZ National Beef Carcase Competition.

Judged by Meat Standards Australia (MSA) Research and Development and Integrity Manager Janine Lau the competition aimed to provide feedback to producers about their cattle's compliance to market specifications, lean meat yield and eating quality as represented by the MSA Index.

From a record-breaking pool of more than 1,077 head graded at 21 processing plants from every state, AS and M Campbell (operated by Bruce Campbell from Cooara near Keysbrook, south of Perth WA) claimed both the Achievement Award Overall Champion Carcase and Reserve Champion Carcase.

TW Pearson and Son, Australind, WA, won the MSA Index Award for the individual carcase with the highest total MSA Index, with an MSA Index of 68.32, as well as the MSA Index Award for a group of three carcases with the highest total MSA Index, with a combined MSA Index of 201.82.

AS and M Campbell also took out the Beef Australia Highest Pen Award for the highest scoring pen of three and the Reserve Champion Pen Award.

Janine, who also judged the 2015 competition, was impressed by the quality of this year's entries.

"Forty percent of carcases recorded an MSA Index above 60.61, placing them in the top 25% of MSA graded cattle," she said.

Competition committee chairman David Hill said an innovative approach to scoring was introduced this year with a lean meat yield algorithm currently used by industry adopted as a more accurate way of measuring the yield component of the competition.

Once again the MSA Index was worth 40%, 40% for lean meat yield and 20% for market specifications aligning to each class.

"The competition is not just about the ribbon anymore, it's about the opportunity for education and benchmarking performance against the best in the country for eating quality and yield," he said.

Other winners included:

- G and B Bendotti, Pemberton, WA, for a pen of Angus steers which topped the grassfed steers/heifers 260–340kg class
- Blue River Grazing, Pemberton, WA, for a pen of Angus steers which topped the grassfed export chiller bullocks 300–420kg
- Terry Nolan and family, Gympie, Queensland, for a pen of Blonde d'Aquitaine-cross steers which topped the grainfed trade steer or heifer 180–260kg class
- Texas Angus, Warialda, NSW, for a pen of Angus steers which toped the grainfed export trade steer 300–420kg class
- Wallawong Premium Beef and H Birchill, Gunnedah, NSW, for a pen of Murray Grey steers which topped the unrestricted feed steer or heifer 260–340kg class. ■

For the full list of results go to beefaustralia.com.au

To find out more about carcase performance feedback, head to: solutionstofeedback.mla.com.au/cattle

BEEF AUSTRALIA 2018 ROCKHAMPTON

Thinking small brings big rewards

South Australian producer Michele Lally won the 2018 MLA Producer Innovation Award for her small capacity, on-farm abattoir concept.

Her business, Australian Micro Abattoirs, is developing small capacity abattoirs, which meet Australian standards and regulatory approval in an adaptable modular concept.

Based in the Clare Valley in South Australia, Michele (pictured with MLA's Managing Director Richard Norton) received the award at the 2018 Rabobank Beef Industry Awards, held as part of Beef Australia 2018.

Michele entered the red meat industry via the Savannah Lamb paddock-to-plate enterprise she developed with her husband Phil. Through this, she saw first-hand the challenges of using large-scale facilities to process small numbers of animals requiring full traceability.

After developing a pilot abattoir which was operating and delivering exceptional value, the concept received strong interest from other producers. Australian Micro Abattoirs was then born, and the business began to take shape through validation and testing minimum viable product.

Australian Micro Abattoirs undertook significant research which identified ongoing demand from three streams: the paddock-to-plate producer; corporate and large-scale farm or feedlots, and community groups or co-operatives.

Michele spends time working with producers to realise their aspirations of setting prices and value adding their livestock operations by offering new ways to market and increase farm-gate profitability.

In winning the award, Michele will now receive the assistance of a consultant to help refine her business model. She will also receive a trip to attend MLA Red Meat 2018 in Canberra in November.

Australian Micro Abattoirs has participated in the MLA Donor Company Producer Innovation Fast-Track program, designed to accelerate producer and industry-developed start-ups. ■

mla.com.au/fasttrack

An innovation celebration

Visitors to the MLA site at Beef Australia 2018 got up close and personal with innovations predicted to make an impact from the paddock through to the plate.

On show were technologies currently involved in MLA and MLA Donor Company-funded research including:

SwagBot: A robot to muster livestock, control weeds and send paddock data to the farm computer, the SwagBot is being developed by University of Sydney. Professor Salah Sukkarieh, who also spoke at Beef Australia, said a final prototype is being developed for extensive on-farm testing.

BladeStop™: Developed by Machinery Automation and Robotics, the technology has brought improved workplace safety and efficiency to the processing sector. Available as a retrofit, the BladeStop™ is a mechanism for bandsaws that, upon sensing contact with the operator's hand, will stop the blade within 15 milliseconds.

In front of the camera:

- **Nix** is a camera which accurately assesses colour and has potential in objectively measuring meat colour during processing.
- **Frontmatec** hyperspectral camera combines black and white images with LED wavelengths to objectively grade meat attributes such as muscle area, fat depth and marbling.
- **Flir** can potentially be used to take images of live cattle to help assess their market compliance potential while on farm. ■

mla.com.au

The reality of beef farming

More than 4,000 people of all ages and backgrounds experienced first hand the story of Australian beef in the lead up to and during Beef Australia 2018.

MLA took its Paddock to Plate Story to the road on an 'Australian Beef: the Greatest' tour of schools and local communities along the coast of NSW and Queensland before setting up at Beef Australia 2018.

The 360° immersive technology tells the story of Australian beef production and explains why Australia produces the greatest beef in the world. The footage takes viewers into the world of Australian cattle farming, transportation, feedlots, processing and end markets with the consumer.

Research indicates there are now about 20% less Australians from urban centres visiting cattle or sheep farms annually compared to six years ago. This, coupled with a rise in consumer interest in the provenance of food, led MLA to create an innovative way to engage the broader community about how Australian red meat is produced. ■

To find out more about the Paddock to Plate Story and Australian beef supply chain, visit australianbeef.com.au

See the video of the tour at: beefaustralia2018.mla.com.au/paddocktoplate

Celebrating the steak sandwich

There's a new day of national importance – National Steak Sandwich Day.

Held on 12 May to coincide with the culmination of Beef Australia 2018, the MLA-initiated event encouraged Australians to visit their local butcher or retailer, purchase a steak and enjoy the ultimate steak sandwich with family and friends.

Underpinning MLA's 'Australian Beef: the Greatest' marketing platform, a Facebook event was posted to allow people to register their interest, share their stories, recipes and pictures, and connect with like-minded lovers of the iconic steak sandwich.

A number of high-profile chefs including Curtis Stone, Adrian Richardson, Jack Stein, Matt Golinski and Dominique Rizzo supported National Steak Sandwich Day by sharing their own classic steak sandwich creations.

Butchers also embraced it with in-store promotional materials, with a number of butchers hosting barbecues. ■

Search for National Steak Sandwich Day on Facebook

2,927
Facebook users accepted the invite to participate in National Steak Sandwich Day.

105
items of media coverage, 30 of which included recipes.

Diary dates

LambEx

When: 5–7 August

Where: Perth, WA

What: LambEx is a celebration of Australia's sheep and lamb industries. This year's event boasts a packed program, speakers from around the globe and networking opportunities, as well as post-conference tours.

lambex.com.au

Red Meat 2018

When: 20–23 November

Where: Canberra, ACT

What: Red Meat 2018 is more than just MLA's Annual General Meeting. It includes forums on the latest research, innovation and marketing insights, a tradeshow, producer tour and networking opportunities.

redmeat.mla.com.au

ON FARM

RESEARCH IN ACTION

Image: Alix McFarland Photography

IN BRIEF

Calf Alert accuracy improves

The development of a device that provides the date and location of calving within 24 hours to help researchers address the problem of calf loss in extensive beef production systems, has taken a significant step forward.

An updated prototype of the Calf Alert device was tested in MLA-funded field trials completed this year at properties near Longreach and Rockhampton, Queensland.

The device has been trialled in pregnant cows for up to seven months without any adverse effects and a high retention rate – an Australian first, with most other intravaginal devices only being in situ for a couple of weeks.

Project leader, Dr Cyril Stephen, Charles Sturt University, Wagga Wagga, NSW, said the ability to detect calving will enable the maximum number of calves to be monitored in the first 24 hours of their life, increasing the opportunity to identify, investigate and address any calf losses occurring in that timeframe.

"For example, providing the date and time could be used to highlight how climatic effects result in calf loss such as extremes in the temperature humidity index," Cyril said.

"Similarly, by deriving the location of the calving site, new calves can be observed for abnormalities such as congenital defects, or other causes of ill thrift.

"Additionally, cows can be assessed for problems resulting from calving difficulty, poor mothering, distance to water, low body condition resulting in reduce milk production and therefore dehydration of the calf, or effects from the environment such as predation, or temperature/humidity."

The trial site at Longreach Pastoral College covered 1,050ha and utilised Santa Gertrudis cows, while the AgForce Queensland-owned Belmont Research Station site involved 150ha and Belmont Red cows. Devices were inserted into 80 mid-to-late gestation cows and the devices monitored over 150 days. ■

Dr Cyril Stephen
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Getting goat nutrition right

The series of goat production best practice videos has expanded with four new offerings focusing on getting nutrition right.

Available on MLA's YouTube channel, the videos feature commercial producers explaining how nutrition is managed in their enterprise.

The videos cover:

- determining forage supply and demand
- calculating a forage budget, and
- supplementation. ■

youtube.com/meatandlivestock

Keeping score

New research has shown weight and condition score can predict the productivity of non-Merino ewes and survival and growth rates of their progeny.

The findings came from 'LifeTime Maternals – development of management guidelines of non-Merino ewes', a project funded by MLA.

Project leader Dr Andrew Thompson from Murdoch University said the results implied that condition score (CS) targets at lambing of 2.7 for single-bearing ewes and at least 3.3 for multiple-bearing ewes are likely to achieve near-maximum lamb survival and weaning rates.

"This clearly demonstrates the value of pregnancy scanning ewes and differentially managing those with multiple foetuses," he said.

"Further work is still required to establish the scenarios whereby carefully managing feed on offer prior to and during lambing may mitigate potentially adverse effects of poor pregnancy nutrition on the birth weights and survival of twin lambs.

"It is clear that improving feed on offer from late pregnancy until weaning does not fully counteract the adverse effects of poor nutrition during pregnancy on weaning weight of lambs from non-Merino ewes."

MLA Program Manager – Sheep R&D Richard Apps said the research provided valuable insights for producers.

"For example, heavier or fatter maternal ewes conceived more lambs and the response is linear to 90kg or CS 4.5," Mr Apps said.

"Ewes that were multiple bearers in the previous year achieved about 15% higher reproductive rates than single-bearing ewes at the same weight. The research indicated producers should aim for CS 3 or above at joining."

New LifeTime Maternals tools are expected to be available by the end of 2018. They will be incorporated into new and existing sheep industry extension and adoption programs. ■

Read the full report:
mla.com.au/lifetimematernalreport

Age and dentition for new lamb definition

Sheep Producers Australia (SPA) has endorsed a change in the industry definition of lamb, based on industry-wide feedback.

The new definition, in line with New Zealand and as outlined in the New Zealand Lamb and Mutton Carcass Classification, is *'young sheep under 12 months of age or which do not have any permanent incisor teeth in wear'*.

The decision was based on the majority of feedback provided during a nine-week public consultation process where 83% of respondents to an industry survey supported the change.

SPA President Allan Piggott said, in addition to industry feedback, the SPA board also relied on science and data in endorsing the change to a uniform industry position on the lamb definition.

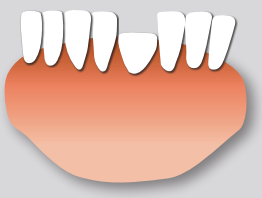
"The new definition will even the playing field against New Zealand in our export markets and provide producers with an indicator before they incur the 'price cliff face' of lamb being downgraded to hogget or mutton. The current definition means that as soon as eruption is evident, the animal becomes classed as mutton, and results in a lower price," he said.

Allan said the next step was for SPA and industry stakeholders to work through the development of an implementation plan, given the lamb definition is currently defined in various federal, state and industry regulations and standards.

The lamb definition review is part of the broader 'Fit for Purpose Language Program' being undertaken by SPA. ■

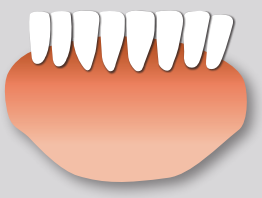
sheepproducers.com.au

New definition of lamb



Young sheep under 12 months of age or which do not have any permanent incisor teeth in wear.

Old definition of lamb



Meat derived from a female, castrated male, or entire male that shows no evidence of eruption of permanent incisor teeth.

Leucaena Network looks forward

It's shaping up to be a big year for the Leucaena Network. Not only has its website undergone a complete overhaul, but it's also welcomed a new executive officer, Bron Christensen.

The Leucaena Network is a grassfed beef producer group comprising leucaena growers, service providers, industry representatives and researchers.

Here *Feedback* speaks with Bron about the year ahead.

How has the website refresh made it easier for industry to find out more about leucaena?
Our aim is to make the website the first port of call for 'all things leucaena'. The public site is continually being updated with new information for those interested in the leucaena industry and the 'members only' site is being populated with tools, research and specific information to assist producers.

What about social media?
We have a new Facebook page where producers can get quick updates, as well as a 'members only' group where members can chat online about their planting experiences, seek feedback or purchase/sell leucaena equipment or services.

What else is in store for the Leucaena Network this year?
It's shaping up to be activity-filled and outcomes-focused. It will include two MLA Donor Company Producer Innovation Fast-Track supported projects:

- **Sterile leucaena progress**
  The network is excited to join MLA, University of Queensland and University of Western Australia in the long-term research project for a sterile leucaena variety which will open up leucaena as a grazing system throughout Australia and overseas.
- **Redlands road-testing**
  The new psyllid-resistant variety 'Redlands' is a focus and, with MLA's support, we've established trials with six producers in north Queensland. These trials will provide valuable information on best practice establishment, as well test the efficacy of Redlands as psyllid-resistant. ■

leucaena.net

Over the fence

'Over the fence' follows a group of producers from around Australia as they manage their operations over the course of a year and respond to the challenges that arise in a modern beef enterprise.

SNAPSHOT:

Nick Radford,
Penola, South Australia

Area: 3,690ha

Enterprise:
Breeding Angus cattle

SEASONAL CHALLENGES:

It's been a peculiar year rain-wise. We had around 12mm in early March, which only served to ruin the remaining dry feed. The feed we had has been used and what's left has little feed value. We had a lot of green grass that lasted but it didn't turn out to be high-value feed, and I'm not quite sure why. Producers around here are saying their lambs just haven't had the weight on them, in spite of the apparently abundant feed.

PROGRESS ON LONG-TERM GOALS:

We had 512 first-calving heifers and only had to help with 24 calves with a good survival rate, which was a great result.

I've been focusing on implementing the strategies I learned from Pasture Principles: having bigger mobs and moving them more often. It's been a challenge to keep the water up to them and move them when they're calving. We've improved some of the older water points. We put a lot of new points in when we cut the paddocks up smaller, so now we are also adding new tanks and troughs to the older points.

The past year has taught me more about fine-tuning; to use every blade of grass to its full potential. My plans for the next 12 months are to keep fine-tuning my pasture management and make the knowledge I've attained through Pasture Principles second nature. ■

ACTIVITIES OVER THE NEXT TWO MONTHS:

> Calf marking in May.
> Fencing.
> Shed maintenance if it gets wet.

Nick Radford
E: nickradford5@bigpond.com

SNAPSHOT:

Johnny Gardner,
Cavendish, Victoria

Area: 1,850ha

Enterprise:
Prime lamb production from a 10,000 self-replacing ewe flock and 220ha of grain and oilseed crops

YOUNG GUN

Johnny has just been named one of the finalists in the MLA-sponsored LambEx Young Guns competition.
lambex.com.au/young-guns

SEASONAL CHALLENGES:

Often, as farmers, we like to describe the positives and shy away from underperformance. However, reading back on the first of our 'Over the Fence' articles, I note we had a goal to start our reproduction year scanning 170%. We have just completed our scanning and our terminal ewes scanned in at 130% and maternal ewes at 150%, so we still have quite a way to go. When you go through and think you have ticked all the boxes, sometimes farming can be humbling.

We've not really received any summer rain. We're setting up a few renovated paddocks to sow down winter forage crops. We're updating some water points with new solar pumps and doing some earthworks to ensure better drainage for winter. Lambs are being finished in our feedlot and we're currently joining our ewe lambs. They're looking good with 1,000 weighing in at 44kg and 800 averaging 48kg.

PROGRESS ON LONG-TERM GOALS:

Our succession journey continues smoothly and our family is communicating well. I've now begun a leadership scholarship with Australian Rural Leadership and Sheep Producers Australia.

We're doing some interesting work with variable-rate fertiliser spreading. Longer term, I'm continuing to work through the elements required to build a low-cost business model to achieve our goals. ■

ACTIVITIES OVER THE NEXT TWO MONTHS:

> Lambing.
> Sowing.
> Financial planning.

Johnny Gardner
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SNAPSHOT:

Carlie and Lauchie Ward, Dingo, Emerald and Bajool, Queensland

Area:
8,500ha plus 12,750ha leased

Enterprise:
Breeding and backgrounding with a herd of crossbred cows joined to Angus and Wagyu sires

SEASONAL CHALLENGES:

The end of summer saw a good break at Dingo. While this was welcome – given seasonal conditions everywhere else and conditions in the market – we continued with our pre-rain marketing schedule. The break allowed us to carry our number 7s (our 2017 calf drop) a bit longer. This change – keeping heifers to join – has meant we've had to be sharper on markets, selling our feeders a little earlier instead of trying to feed them on. However, given our growth rates at this time, this probably won't change our cash flow too much. The rain has also seen our leucaena get away and given us the confidence to introduce it on a larger scale.

PROGRESS ON LONG-TERM GOALS:

This year we've learnt the absolute importance of planning and running an efficient business. We've also learnt more about managing staff effectively while providing human resources support from within the business. In the next 12 months we hope to do the following: tick off the jobs that still seem to be on our list; establish more leucaena; get a better handle on our system; further refine our breeding goals, and create a better work environment for all involved. ■

ACTIVITIES OVER THE NEXT TWO MONTHS:

- Branding on the coast.
- Weighing and marketing the heaviest number 7s.
- Pregnancy testing and matching calving numbers to pasture availability.

Carlie and Lauchie Ward
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INTEGRITY

Help to meet obligations

MLA's Integrity Systems Company (ISC) has developed free resources to help producers meet their record-keeping obligations under the Livestock Production Assurance (LPA) program.

The LPA program is the Australian red meat industry's on-farm assurance program underpinned by seven key elements covering food safety, animal welfare and biosecurity.

"LPA accreditation is your pledge that meat from your farm has been produced safely, ethically and meets biosecurity requirements – it means you stand by what you sell," said Dr Jane Weatherley, CEO of Integrity Systems Company.

"When you tick the box on your LPA NVD, you're guaranteeing your on-farm practices meet LPA requirements, and ultimately customer expectations. Your tick must be backed up by accurate farm records."

Australia's red meat integrity system

Resources

ISC has produced resources in different formats, to suit different management styles. They include:

1. Free printable templates Go to mla.com.au/integritytoolsresources for farm record templates including:

- Chemical inventory (veterinary and agricultural)
- Property risk assessment documentation and map
- Livestock treatment record
- On-farm biosecurity plan
- Property visitor register
- Livestock sales and movements record

2. Free Excel spreadsheet Available at mla.com.au/lparecordkeeping the spreadsheet contains 10 editable templates including:

- Chemical inventory (veterinary and agricultural)
- Property risk assessment documentation
- Livestock treatment record
- Grain and fodder treatment record
- Livestock feeding record

3. Record-keeping booklet Producers can order a booklet from the LPA Service Centre for $7.50. T: 1800 683 111.

Other resources

LPA Service Centre: lpa.nlis.com.au or 1800 654 743

LPA Learning: mla.com.au/LPAlearning

LPA record keeping: mla.com.au/lparecordkeeping

Integrity tools and resources: mla.com.au/integritytoolsresources

Resources are available at: mla.com.au/integrity

Find the Australian Animal Welfare Standards and Guidelines at: animalwelfarestandards.net.au

Additions to LPA audits

On-farm animal welfare and biosecurity management practices are now part of the Livestock Production Assurance (LPA) program's random audits.

These requirements were added to the five existing requirements – property risk assessment, safe and responsible animal treatments, safe livestock feed, preparation for dispatch, and livestock transactions and movements – in October 2017.

AUS-MEAT contract auditor Brendan Ryan conducts LPA audits in Victoria and South Australia and said most producers were on the right track with meeting requirements.

"Producers just need to spend some more time demonstrating what they're doing," he said.

"When they're notified about an audit, my advice is 'Don't panic – just read the information pack carefully and you'll know what to do'."

To meet requirements, every LPA-accredited producer needs to have a Farm Biosecurity Plan in place and implemented on-farm.

"The Biosecurity Plan is not 'War and Peace'," Brendan said.

"Producers just need to think about the things they do with regards to biosecurity on their farm, and put this in the template. It's things producers do every day – managing and recording the introduction and movement of livestock; controlling people, equipment and vehicles entering the property – where that's practical; and monitoring and managing the health of their livestock."

LPA-accredited producers must also be able to demonstrate that their handling of livestock is consistent with the Australian Animal Welfare Standards and Guidelines. Those responsible for livestock management need to have a copy of the Standards and Guidelines, be familiar with its content, complete the LPA module, and advise and oversee others handling livestock.

From July 2018 failure to meet these requirements in an LPA audit will mean sanctions are incurred.

All LPA-accredited producers may be audited. PICs are selected for audit at random from the database of all LPA-accredited producers, including producers with just a few livestock.

FEEDBASE

The costly impact of 'bad' clover

Southern Australian sheep producers are benefiting from new knowledge on an old issue, with MLA funding research identifying problem sub-clover cultivars in pastures.

Clovers are an important feedbase for many producers, but older, high-oestrogenic varieties can play havoc with flock fertility.

A three-year Producer Demonstration Site (PDS) is addressing declining ewe fertility from clover-based pastures.

The 'Good clover, bad clover' project aims to increase producer awareness of potential issues from problem varieties and give producers practical tools to manage pastures and improve animal health.

Project manager Tiffany Bennett, from Primary Industries and Regions SA, said varieties of sub-clovers sown from the 1930s to the 1980s (including Yarloop, Dinninup, Geraldton and Dwalganup) are still persistent in south-east SA and Kangaroo Island pastures.

Their high-oestrogenic content can reduce sheep fertility and can lead to decreased lambing percentages.

"These sub-clovers contain high levels of isoflavones which are potent to sheep when plant material is green," Tiffany said.

"The isoflavones are responsible for a variety of symptoms in sheep, including reduced ewe fertility, difficult births, prolapsed uteruses, udder development in maiden ewes (sometimes in wethers), and urethral blockages in wethers."

The project has revealed that oestrogenic pastures are more prevalent than initially thought.

A survey of 160 producers showed most were unaware of the presence of oestrogenic clovers, with 85% never having undertaken a visual assessment or laboratory analysis of their clover pastures.

The PDS is training producers from 10 focus farms to identify bad clovers and develop management plans. They will host field days to train other producers.

Clover from 25 paddocks across these 10 farms was visually assessed and analysed in a laboratory to determine oestrogenic content. Twenty paddocks had greater than 20% oestrogenic cultivars in the clover portion of pastures, and half these paddocks had potential to cause fertility problems in ewes.

The critical levels of the isoflavones daidzein and formononetin from laboratory testing were less than 1,000mg/ha (dry matter). From visual assessment, pastures with greater than 20% oestrogenic clovers were considered problematic.

Management strategies

Tiffany said problem clover prevalence is not a sign of poor management.

"Older cultivars of sub-clover are hard seeded and very persistent, and the seed bank is significant," she said.

"Even after years of cropping, pastures can still contain clover.

"Good management practices such as grass-cleaning paddocks to improve pastures can actually increase the clover content and the effect of the oestrogenic cultivars."

The good news is there are management strategies available to producers:

1. Understand the issue

- Analyse each paddock to assess farm-scale prevalence of problem clovers.

2. Graze strategically

- Avoid grazing ewes on oestrogenic clovers before or during mating, as clover can cause temporary infertility.
- Avoid long-term exposure of ewes to large amounts of oestrogenic clovers, as this can cause permanent infertility. This cumulative effect can occur over two to three years' exposure.
- Reserve high-oestrogenic clovers to finish terminal lambs or cattle, which are not affected.
- Graze weaner and young ewes on the least oestrogenic pastures available.
- As the plant senesces (dies off), isoflavones break down and plant material becomes safe for grazing ewes.
- Avoid cutting hay and silage from oestrogenic clover paddocks, because fodder cut at the ideal time before clover has senesced is still problematic.

3. Manage pastures

- Dilute clover-based pastures with newer, non-oestrogenic clovers or other pasture species.
- Develop a long-term strategic spraying and grazing program with an agronomist to prevent clover seed set and reduce the seed bank.
- Buy certified clover seed to ensure it does not contain older varieties.
- Be aware that purchased hay or silage for feeding ewes could contain high-oestrogenic clovers. ▶

RESEARCH IN
REVIEW

PROJECT NAME
Good clover, bad clover

RESEARCH ORGANISATIONS
MacKillop Farm Management Group, Primary Industries and Regions SA, Ag Kangaroo Island

FUNDING ORGANISATIONS
MLA and MacKillop Farm Management Group with in-kind and sponsorship support from Sheep Connect SA and Natural Resources South East

GOAL
- To increase the awareness of 70% of MacKillop Farm Management Group and Ag Kangaroo Island members of the potential issues and management strategies to deal with oestrogenic clover.
- For 90% of the core group of producers to adopt practices to reduce the impacts of clover disease, and as a result increase 'scanned in lamb' by 20%, lambing percentage by 10%, and decrease dry ewes by 5%.

BUDGET
$85,000

DURATION
May 2017 – December 2019

KEY FINDINGS TO DATE
- 85% of 160 producers surveyed had never undertaken a visual assessment or laboratory analysis of their clover pastures.
- Visual assessments and laboratory tests were taken from 25 paddocks across 10 properties in the south-east of SA and Kangaroo Island. Of these, 20 paddocks had 20% or greater oestrogenic clovers present in the clover portion of the paddock.
- Combined visual assessments and laboratory analysis determined that 10 of the 25 paddocks have the potential to cause fertility problems in ewes.

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Oestrogenic pasture ranking factsheet: mackillopgroup.com.au/media/Livestock

Pin-pointing a

South Australian sheep producers, the Kirkland family, are looking to new research to solve a historical problem.

Like many farms in southern Australia, their property at Furner in south-east SA is host to an abundance of clover-based pastures with varieties selected decades ago for their persistence.

High-oestrogenic clovers such as Yarloop and Dinninup in this historical feedbase have affected flock performance.

Clover and flock fertility

Richard Kirkland (pictured right) knew lambing percentages were down in some paddocks, but participating in the MLA-funded 'Good clover, bad clover' project with the MacKillop Farm Management Group has helped quantify the extent of the issue.

As one of 10 focus farms involved in the Producer Demonstration Site, the Kirklands visually assessed paddocks to identify the clover varieties and estimate the prevalence of bad varieties.

Results confirmed Richard's observations about the productivity of paddocks; for example, the critical level of isoflavones in clover is 1,000mg/kg (dry weight), but one of his paddocks had 4,500mg/kg.

Richard has seen the impact of high-oestrogenic clovers on flock fertility; ewes in better paddocks produce 130% lambing rates, but lambing rates in paddocks dominated by older clover varieties are down to 110–120%.

"We've also observed fewer multiple pregnancies and more dry ewes grazing older clover paddocks," he said.

Scanning percentages were also down by 5–10% for ewes fed silage from clover paddocks.

When this silage was tested, it returned an isoflavone level of 6,280mg/kg.

As a result, Richard now only cuts hay and silage from paddocks with less clover.

"A high seed bank means it's not as simple as replacing old clover varieties with new ones," Richard said.

"We still see clover appearing in paddocks we've cropped for 10 years – the seed bank is massive."

Not all bad news

It's a 'Catch-22' situation, because the older varieties are useful for finishing lambs and Richard has seen weight gains of 500g/day on clover.

To capitalise on the productivity of clover while minimising the fertility risk to ewes, he has introduced strategies such as avoiding grazing ewes on high-oestrogenic clovers.

The Kirklands' main lambing period is in May–June (ewe lambs lamb in August–September), and lambs are weaned onto clover in spring.

The main turn-off of lambs is in November–December, targeting a 24kg carcase weight, with the tail-end and spring-drop lambs finished on broad bean stubble or in the on-farm feedlot over summer.

Three years ago, Richard began a program to dilute the bad varieties of clover. He plants fast-growing annual ryegrass and new varieties of clover in target paddocks.

"This produces more feed as nitrogen sequestered by clover increases growth rates of ryegrass," he said.

Richard estimates the ryegrass paddocks produce 25–30% more dry matter in the growing season.

pasture problem

He dry sows ryegrass in April at a rate of 25kg/ha, and this year is trialling newer clover varieties (Persian and Balansa) in several paddocks to test their performance and persistence.

The Kirklands have introduced electronic ID tags for ewe lambs to track fertility and growth and, although they have only collected their first year of data, Richard is looking forward to analysing performance trends to guide flock management and selection, especially in conjunction with improved fertility as a result of pasture management.

"This pasture research is really valuable to producers – the more research we have on animal health issues, the better, because it creates awareness of how to manage problems on farm," he said.

"New information is important for things which might have been an issue years ago, such as high-oestrogenic clover varieties, but are still creating a problem for the next generation of producers." ■

Richard Kirkland
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LESSONS LEARNED

- Measuring the problem helps to manage it.
- Strategic grazing of high-oestrogenic clovers helps reduce impact on flock fertility.
- New research and information guides on-farm decisions.

SNAPSHOT: **Richard, Nikki, Don and Joanne Kirkland,** Furner, South Australia

Area: 2,000ha plus 250ha leased

Enterprise: Cropping and prime lambs

Livestock: 8,000 Border Leicester–Merino composite ewes

Pasture: Sub-clovers, perennial-based clovers, some phalaris, ryegrass

Soil: Black clay

Rainfall: 625mm

BUILDING CAPABILITY

Pilbara's promising new

Selling Wagyu beef direct to China from WA's Pilbara region is not the stuff of fairytales. An innovative approach is seeing this new red meat venture develop rapidly to lift beef exports from the west.

Launched in 2015 by its owner, Singaporean businessman Bruce Cheung, Pardoo Beef involves a detailed vision to supply high quality Wagyu beef to China. The business plan suggests the enterprise could be turning off 100,000 head by 2031.

But it's not just about selling beef. What makes this venture so compelling is its focus on measurement and data analysis and its enormous capability to manipulate its environment and production systems through large-scale irrigation.

Pardoo aims to:

- turn-off more than 4,000 purebred Wagyu annually at 400kg carcase weight at 30 months of age, within the next five years
- double the area under centre pivot irrigation (presently 810ha) within two years
- graze the Wagyu herd on irrigated pastures full-time
- calve Wagyu heifers at two years old and plan for a calf every year
- calve in June/July, creep feed calves and wean them before summer
- establish its 'Exclusive Pilbara Wagyu' brand in the marketplace before the herd reaches its production targets.

How are they doing it?

According to Pardoo Corporation's Chief Executive Officer Brett Blanchett (pictured opposite with his wife Robyn), their Wagyu herd is in a rapid building phase, with females purchased from Lake Nash Station (Georgina Pastoral Company) in the Barkly Tablelands of the Northern Territory. Already the enterprise is running almost 3,000 females.

"The aim is to produce quality, highly saleable animals using genetics known to favour high marbling and eating quality," he said.

Chedaring Farm, near Perth, is home to Pardoo's Wagyu genetic multiplier herd and is where they will use artificial insemination and embryo transfer to rapidly increase the rate of genetic gain in their animals.

MLA Donor Company has partnered with Pardoo through a collaborative co-innovation program which involves a three-year data collection and analysis initiative to explore the production/economic benefits of different pasture and breeder management systems and global market options in determining how to best utilise Pardoo's 15-gigalitre annual water allocation.

Led by former Professor of Animal Production Systems at Murdoch University Kevin Bell, the research team is measuring Pardoo's production parameters. These include pasture growth per megalitre of water, fodder production costs (in cents) per megajoule of energy, nutrient profile and comparative performance of pasture grasses such as Rhodes and panic, legumes (lucerne) and crops (maize silage).

"We're also assessing cattle performance through direct growth measurements, as well as blood and tissue tests to monitor nutrient or trace element deficiencies and effectiveness of parasite control," Kevin said.

"We realise the beef production system is truly innovative and pushing the boundaries of accepted practice in this northern region. We take it seriously to monitor water, soil, plant and animal parameters to ensure the sustainable and profitable production of healthy cattle and make this information available to industry.

"The results of these analyses will not only inform our business practices and direction, but also help other northern

beef enterprises realise what is possible.

"For example, while the Wagyu herd lives under irrigation full-time, if our analysis shows it is more resource-efficient and profitable to use part or all of that area for fodder production and 'cut and carry', similar to systems producers use in the UK and EU, we'll do that."

Production systems

Brett, who has managed properties from New Zealand to the Top End, is keen to see how the business can maximise the artesian aquifer irrigation to manage production.

"We're looking at calving our Wagyus in June–July when it's cooler, creep feeding the calves and weaning them at 90–100kg in time to dry the cows off through summer," he said.

Kevin said this practice would also improve pregnancy rates for females, particularly first-calf cows, and they expect the herd to achieve a 95% average weaning rate.

market

LESSONS LEARNED

- Irrigation means producers can challenge and change their environmental constraints.
- Prepare the marketplace for the product you plan to deliver.
- The MLA Donor Company project with Pardoo will help northern producers think outside the square with real commercial data on a range of production options.

Purebred Wagyu weaners are also continuously rotationally grazed under pivot irrigation until reaching 400kg when they are shifted to feedlots in south-west WA for long feeding.

Marketing

To ensure their market is well established by the time Pardoo Beef reaches full production, the company keeps 1,000 head on feed year-round to ensure continuity of supply.

"We'll keep this going while we're learning the business and exploring the challenges of operating on the west coast," Brett said.

As the supply chain becomes established, Pardoo will continue to work with the company's feedlot, finishing and processing at Warwick, Queensland. ■

To obtain information about this MLA Donor Company project as it progresses contact:

Kevin Bell
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T: 0427 433 244

pardoo.com

SNAPSHOT: **Pardoo Beef,** Pardoo Station, Port Hedland, WA

Area:
200,000ha at Port Hedland

430ha at Wundowie

500ha in Perth Hills

Enterprise:
Purebred Wagyu breeding and Droughtmaster–Santa Gertrudis for MSA beef production

Livestock:
3,000 Wagyu breeders

6,000 Droughtmaster–Santa Gertrudis breeders

Pasture:
Native herbage, buffel and irrigated Rhodes grass, panic, lucerne

Soil:
Pindan sand

Rainfall:
350mm

Getting to know ewe

WA sheepmeat producers Clayton and Polly South are harnessing every tool available, including flock recording and introducing grazing crops, to future-proof their mixed farming enterprise.

Clayton (pictured) will take other producers on their journey of using technology, including electronic identification (eID), when he speaks at the 2018 LambEx conference in Perth on Monday 6 August, and hosts a farm tour on Wednesday 8 August.

The Souths introduced whole-of-flock eID five years ago and are building up a database of performance information for their 6,500 Dohne ewes.

"We initially just focused on fertility and recorded if ewes scanned as dry, single lamb or multiple lambs, to track the repeatability of pregnancy status," Clayton said.

"We now weigh lambs at marking and weaning to track growth rates, and weigh ewe lambs at six months to identify which ones have reached the 42kg threshold for joining."

The Souths join ewe lambs at seven months of age to keep them in line with the main ewe flock, so lambing is completed before harvest begins in October – a necessity in a mixed farming enterprise.

Ewe lambs average 45–50% lambing. There has been a 15–20% increase in pregnancy rates (at scanning) across the whole age group the following year as traditional maidens at 18 months.

LESSONS LEARNED

- Collect data that aids your production goals and use it objectively.
- Use all the tools available to get the balance right in a mixed farming business – including the economics of each enterprise, each year.
- Make decisions early and back your instinct – don't chop and change; stay focused.

SNAPSHOT: **Clayton and Polly South,** Wagin, WA

Area: 4,940ha (owned and leased)

Enterprise: 65–70% cropping, 30–35% sheep

Livestock: 6,500 ewes the majority run as a self-replacing Dohne flock and around 1,000–1,500 in a terminal White Suffolk program

Pasture: Sub-clovers

Soil: Wide variety, mostly duplex and sand over clay

Rainfall: 320mm

Making informed decisions

While fertility is Clayton's top priority, he also records fleece weight and dag scores.

"It's about building layers of information and looking for patterns to guide decisions about which animals to keep or cull in response to seasonal conditions," he said.

Wether lambs and all crossbred lambs are sold at weaning, so the information collected is used to prioritise management of ewes.

Dry ewes get a 'second chance' and are joined to White Suffolk rams. They remain in this terminal flock unless they scan dry again, in which case they are culled.

This crossbred flock provides an early exit strategy if the season dictates it.

The main flock of between 5,000–5,500 ewes (plus an additional 1,000–1,200 ewe lambs) are joined to Dohne rams.

At scanning, ewes are grouped based on foetal age (early and late) and lambing status (dry, single or twin).

Previously, Clayton would shear ewes in age groups, but he now manages them using a ranking system based on scanning information.

Repeat performers

Data analysis reveals trends. For example, in 2016, 79% of early-twinning ewes achieved 'twin or triplet' status again in 2017, and only 3% scanned as dry. In 2018, 74% of the early-twin ewes (from 2017) were scanned with multiples again.

Single-bearing ewes average 90% lambing and twinning ewes average 150% lambing, with the singles averaging 1–2kg heavier at weaning.

"Our main aim is to improve these lamb survival rates as much as possible," Clayton said.

"We use all of the data to be objective and not compromise flock fertility, as we now know what each ewe is capable of and her exact nutritional requirements.

"It allows us to prioritise ewes, and we join our best rams with early-twinning ewes, with the knowledge that they will give us the most replacement ewe lambs, in an attempt to speed up genetic gains."

Clayton also incorporates information into their ram buying decisions.

Before each ram sale, he identifies rams with Australian Sheep Breeding Values (ASBVs) for his desired traits of fertility and growth (eye muscle, maternal fertility and weaning weight), backed up by visual assessment.

The Souths use a ram-joining ratio of 1–1.5% for mature ewes, 1.8% for maiden ewes (18 months) and 3–4% for ewe lambs. ■

Clayton South
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LambEx 2018, 5–7 August, Perth: lambex.com.au

Clayton South speaks at LambEx on Monday 6 August, and hosts a farm tour on Wednesday 8 August 2018

MLA Producer Demonstration Sites: mla.com.au/pds

The paddock test

Data collection plays a huge role in getting the balance right between grazing and cropping for the Souths.

Last year Clayton and Polly hosted a cereal crop grazing trial as part of an MLA Producer Demonstration Site (PDS) project run by south-west farming systems groups Southern Dirt and the Facey Group.

"Grazing cereals is opportunistic for us as we don't want to compromise grain yields, so we only use it as a strategy in years when crops get away really well and it enables us to defer pasture for a bit longer," Clayton said.

He prefers to only graze barley crops, which he has found to be more vigorous than wheat and can be sown early enough for grazing during the late autumn–early winter feed gap.

For the PDS trial, Clayton split a mob of 120 twin-bearing ewes; half remained on pasture (at a stocking rate of 9 DSE/ha) and half were introduced to 110ha of Scope CL barley.

The crop was planted on 17 May, ewes were introduced on 21 June when plants were at early tillering stage, and ewes were removed on 27 July.

At the end of the grazing period, the condition score of the ewes run on the barley crop was 50% higher than the pasture-grazing average. There was no significant difference in the number of lambs born or surviving.

Only 5–10ha of the crop showed visual signs of grazing damage. The crop soon recovered, with no yield penalty at harvest.

Clayton said this information has reinforced the idea that grazing crops is a seasonal tool which can boost the condition of twin-bearing ewes before lambing, as long as crop yield is not compromised.

"We also learned that it is best to graze clean cropping paddocks, as sheep can reduce canopy cover, which affects crop competition with weeds," he said.

For producers like Clayton, an on-farm program such as the PDS is another tool for managing a mixed farm.

"It's important to use all the information available to make management decisions – seasonal forecasts, historical crop performance, the stage of the crop, the condition of sheep, as well as your own gut instinct," he said.

"We have learned that no two seasons are the same, so it is important to make informed decisions early and back your judgement – don't chop and change." ■

It's all in the detail

WA sheep producer Guy Bowen was just 13 when he started recording flock data.

Fifty years since he purchased his first ewes and registered a stud flock, Guy and his wife Joanne (pictured) continue to use data to guide management decisions in their White Suffolk and maternal ram breeding operation at York, 80km east of Perth.

The Bowens will open their front gate for a farm tour as part of the MLA-supported LambEx 2018, to show how they collect and use data to achieve breeding objectives such as increasing ewe efficiency.

The Mount Ronan flock of 900 ewes (including dams in the pedigree programs) is run under commercial conditions.

The Bowens collect data with prime lamb producers and the consumer in mind.

Their daughter, Elise, oversees flock records through her business, Sheep Data Management (see separate story on page 26) and plays a vital role in analysing information.

Flock recording tools

The Bowens were early adopters of recording technology through a Murdoch University electronic identification (eID) trial in 2007.

They use eID to collect information on individual animals, including growth rates, temperament and reproductive performance.

The recent addition of an automated sheep handler has increased efficiency of flock management.

LESSONS LEARNED

- Capture the information which is relevant to your specific breeding objectives.
- Collecting and analysing data doesn't have to be expensive.
- Collect data with your market in mind.

SNAPSHOT: **Guy and Joanne Bowen,** York, WA

Area: 394ha plus 674ha leased

Enterprise: White Suffolk and maternal ram breeding

Livestock: 900 stud ewes

Pasture: Sub-clovers

Soil: Duplex soils

Rainfall: 495mm

"Data collection doesn't have to be expensive," Guy said.

"Entry-level sheep handlers are reasonably priced – we use a simple model, but it's very effective as it incorporates scales which link to eID and a three-way drafting system."

The Bowens use a range of other tools to add layers of information about flock performance, including:

- genomic testing to predict breeding values for carcase traits such as intramuscular fat, shear force and eye muscle
- MateSel, a mating selection program to identify which rams and ewes are best matched to achieve breeding objectives
- LAMBPLAN, the Sheep Genetics national genetic evaluation program for prime lamb producers.

Quality data

"Accurate data is paramount as it minimises risk in genetic development and enables higher success at achieving breeding objectives," Guy said.

To aid the accuracy of data collected at lambing, the Bowens employ a professional shepherd to monitor ewes and record the weight and pedigree data of every lamb born, as well as capturing information such as dam behaviour.

The Bowens are conscious of not just collecting data for the sake of it – at Mount Ronan, information underpins decisions about which animals perform well enough to stay in the flock, as well as their suitability for either the terminal or maternal breeding programs.

The Bowens use Sheep Genetics Australian Sheep Breeding Values (ASBVs) to select for fertile ewes with good growth and carcase characteristics, and aim to continually improve efficiency through higher flock pregnancy-scanning percentages, better lamb survival and increased lamb growth rates.

Information such as ewe condition score and weight is also used to identify resilient and efficient ewes, as well as the animals which cost money to manage and should be culled.

"We aim to breed moderate-sized ewes which have a lower feed requirement and can maintain a condition score of 3 at critical times such as weaning, pre-joining and during periods of feed shortage," Guy said.

"These are the outstanding performers in our flock and we want to identify and harness them."

The Bowens apply a ewe-efficiency index to assess which ewes can produce their joining body weight in kilograms of lamb in 100 days of lactation.

In the 2017 lambing, the top 10% of Mount Ronan ewes had an average joining weight of 66.1kg and produced 83.1kg of lamb at 100 days after lambing, with an average ewe efficiency of 125.7%.

The highest performing ewes are directed into the Bowens' artificial insemination (AI) and embryo transfer programs. ■

Guy Bowen
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Check Mt Ronan out for yourself. The Bowens will host an on-farm tour as part of LambEx 2018 on Wednesday 8 August. There will be practical demonstrations of flock data recording, a display of ewes and rams, and presentations by Elise Bowen and the Murdoch University research team about projects run at Mount Ronan.

Sheep genomics testing: sheepcrc.org.au/publications/websites-to-assist-you/sheep-dna-testing

Sheep Genetics: sheepgenetics.org.au

Sheep Data Management: sheepdatamanagement.com

Mount Ronan: mountronan.com.au

Mt Ronan's data collection calendar

January: lamb scanning
Lambs are weighed at around 225 days of age and a LAMBPLAN-accredited scanning operator uses an ultrasound probe to measure the cross-sectional depth of muscle and fat. This data is used to generate accurate post-weaning weight, fat and eye muscle ASBVs.

Mid-February: joining
Ewes are classed on structure, ASBVs and ewe efficiency, and graded into terminal, maternal or commercial/cull flocks. Elite ewes are identified for AI and embryo transfer programs. Stud ewes are assigned to sires using the MateSel program to maximise genetic gain while keeping control of inbreeding. Ewes are weighed and condition scored for future calculation of ewe efficiency.

May: pregnancy scanning
The Bowens record lamb status (dry, single, twin or triplet) and identify early and late lambers. Dry ewes are culled unless they are ewe lambs or ewes in the AI and embryo transfer programs – these animals get a second chance.

Late July: lambing
Lambs are caught at birth, and weighed and ear-tagged to identify them to their sire and dam.

Ewe behaviour, lambing difficulty and udder or teat problems are recorded. This data is entered into the LAMBPLAN database and used to assign a mothering score to each ewe.

Late October: weaning
Lambs are weighed at around 100 days of age and this data is also entered into LAMBPLAN.

Ewe weight and condition score at weaning are recorded for Mount Ronan's ewe efficiency and resilience project. ■

GEARING UP FOR

LambEx 2018

GENETICS

A sheep industry shooting star

Elise Bowen has been in the sheep yards her entire life. As a child, she helped her parents collect data and carry out management practices in the yards for their White Suffolk and maternal flocks. Today, the sheep yards are her office.

A passion for improving the productivity, efficiency and profitability of sheep enterprises inspired Elise (pictured) to establish a flock data management business when she was just 24 years of age, and earned her a Young Guns award at LambEx 2016. Although she has now relocated to Wagga Wagga, NSW, Elise, now 28, will head back to WA to attend LambEx 2018 and help her family (see story page 24) host an on-farm tour as part of the event.

Elise's Young Guns project focused on developing a maternal ewe efficiency index for her family's Mount Ronan White Suffolk and maternal flocks, based at York, east of Perth.

Her parents were early adopters of electronic ID technology through a Murdoch University trial in 2007. From a young age, Elise's computer skills were put to work entering data into Sheep Genetics, the national pedigree and performance recording program.

This exposure to research inspired her to study a Bachelor of Animal Science at Murdoch University, including an honours project looking into nutritional impacts on reproduction in ewe lambs.

After graduating, Elise worked on the Department of Agriculture and Food WA (now Department of Primary Industries and Regional Development) maternal efficiency flock as part of Murdoch University's sheep research team.

She even turned a stint of travel into a research trip, visiting sheep enterprises in the UK, Ireland and Scotland while overseas for 10 months.

The business of data

It wasn't until Elise returned to WA to help run Mount Ronan for a few months in 2014 that she finally pulled together her love of the sheep industry and data collection and kick-started her own flock-recording business, Sheep Data Management.

What began as number crunching for another breeder has grown into a full-time job which sees Elise collect, input, analyse and manage pedigree and performance data for 25 studs and commercial producers across Australia.

"I'm passionate about the efficiency gains and genetic progress producers can make by using data to manage their animals as individuals," Elise said.

Her tip for producers who want to start harnessing information is to first work out what their breeding objectives are, and then identify the traits which will help achieve these goals.

"If you want to improve something, you have to start measuring it," she said.

Elise has started a PhD through Murdoch University and will work on MLA-funded lamb survival projects.

She will research embryo loss in young ewes and ewe lambs between the time of pregnancy scanning and lamb birth, which she sees as an important priority for increasing the industry's productivity and profitability. ■

Sheep Data Management
sheepdatamanagement.com

LambEx 2018: lambex.com.au

lambex.com.au/young-guns

BUSINESS MANAGEMENT

Putting

A new study has shed light on the tactics that can lead to business succession plans which satisfy all stakeholders in a new farm succession project.

The project, a partnership between MLA Donor Company (MDC) and Meridian Agriculture, developed a series of case studies on businesses which had survived successive generations. The factors examined were those which led to a range of outcomes, from continuing to operate in the same way through to selling up.

Sixteen family-owned Australian farming businesses were thoroughly analysed for the report, which is now available online. Eight of those businesses are continuing and the balance were sold, deemed non-viable or have had significant changes in direction.

"In most cases the aims of all the businesses were the same: to ensure sufficient funds to retire, to hand over a viable farm, and to ensure that all members of the family are happy," project manager Mike Stephens from Meridian Agriculture said.

the success into succession

The case studies helped debunk some long-held beliefs, which included:

- **Get big or get out.** This could be replaced with 'get efficient or get out'.
- **You cannot fund retirement, pass on a viable farm and treat your children equally.** These can be achieved by: starting at an early age to build the business, handing over to the next generation early, encouraging family members to earn off-farm income, and using the relevant skills and talents of all family members to achieve agreed goals.
- **Keep the family capital as a single unit.** Maintaining the capital in a block may result in growth if the number of family grows faster than the capital value grows (in real terms), but eventually the asset will have to be sold or some of the shareholders bought out.
- **Maintain 80% equity.** It was shown that 80% equity is an indication of 'lazy capital'. The equity carried by producers involved in successful farm succession has mostly been between 60% and 70%, and an average return on capital of 14%/year has been achieved over the last 20 years.

With these findings in mind, the report also highlighted important contrasts between continuing and non-continuing businesses within the case studies:

- **Teamwork and involving the next generation.** The case studies highlight the importance of working together as a family unit to grow the business, and involving the next generation early on to ensure smooth succession.
- **Agreement on the end game.** In succession, it's important that all family members agree on the end game, and are happy with the outcomes of succession. Compare the approach to succession of two sets of brothers, in case studies where both pairs farmed together from an early age. One set of brothers used their combined talents so the inevitable split would be orderly and advantageous to all. 'It took about an hour to agree', and each member of the family got what they wanted. In contrast, another family endured 20 years of arguments to eventually agree to appoint a liquidator to sell and distribute the assets. The family lost about 40% of its wealth in the split, and no one got what they wanted. ■

Contrasting attributes of farm succession outcomes

Business continuing	Business not continuing
Determination to provide choices	Belief that retirement funds, a viable farm and a happy family, together, are not achievable
Intelligent leadership	Autocratic, patriarchal behaviour
History of well thought-out succession	Poor history of succession
Progressive farm management	Doing things the way they've always been done
Focus on the customer	What customer?
Intelligent use of capital	Using capital to support lifestyle
Prepared to have debt, maintaining low equity	Debt-averse, maintaining 'lazy capital'
Deliberate strategy to encourage stakeholders	Strategy to keep stakeholders off-farm and disengaged
Managing with humility, quietly going about your business	Maintaining position in the family and society as somebody important
Determination not to 'live like peasants'	Determination not to 'look like peasants'
Common end-game goals	No agreement about end-game goals

RESEARCH IN REVIEW

PROJECT NAME
Farm success enabling

RESEARCH ORGANISATIONS
Meridian Agriculture

FUNDING ORGANISATIONS
MLA Donor Company and Meridian Agriculture

GOAL
To develop case studies on successful and unsuccessful farm succession situations as examples to industry.

BUDGET
$172,000

DURATION
2016–2018

KEY FINDINGS
- Successful farm business successions share key attributes.
- Unsuccessful farm business successions fail for varied reasons.
- Long-held beliefs were debunked.

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Read the case studies at: meridian-ag.com.au

BUSINESS MANAGEMENT

Starting with a blank canvas

The crucial point in planning for succession for producers Mark and Anna Gubbins has been to lift any weight of expectation from the shoulders of the next generation.

"When I first came home to the farm, my grandfather issued me a warning about the sheep stud. He said, 'that's your legacy, don't bugger it up!' And they're pretty heavily-weighted words in regard to his thinking," Mark said.

"Anna and I didn't want our two sons (Max and Ben, pictured below with Mark and Anna) to be constrained by history (which dates back to 1930). We decided to take the buckets off them, tip them out and allow them to fill them up again in their own way."

'Emptying the bucket' was an extraordinary act, considering it involved selling their cattle genetics business and dispersing their stud herd at the peak of cattle prices in 2017. Building up the stud and the herd had taken much of Mark and Anna's focus in their 30 years of farming, and was the income generator which funded business expansion.

The eventual decision was to disperse the stud, and the family agreed they would do whatever was required to bring a large number of cattle onto the market in a short time (less than six months). It was a lot of work.

"We were pretty busy, but it's organisation, it's planning, it's management. You spend the time with your staff and say 'look, in sale week this is what's going to happen: these cattle are going to walk through a process of paddocks to the sale ring, they're going to be available for everyone to look at on the way, but there's this step process that we've got to do and we've all got to know what we're doing and we've all got to know when it's going to happen," Mark said.

In the end, 1,500 lots went up for sale in four days last March, including live cattle, embryos and semen. Each lot was sold through the ring individually. In order to avoid flooding the market, younger bulls were held back until September.

Now a purely commercial enterprise, the sale allowed the family to put money into superannuation for Mark and Anna, reduce labour inputs and free up capital for the next generation to set up their businesses using the land base.

They have put some succession models in place, including a trustee management company, and a management company over the whole business with corporate trustees. This structure allows flexibility when required for the future of the business. ■

Mark Gubbins
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SNAPSHOT:

Mark and Anna Gubbins, Chatsworth, Victoria, and Coorong, South Australia

Area:
2,600ha at Chatsworth and 4,000ha at Coorong

Enterprise:
Self-replacing prime lambs and commercial beef

Livestock:
Chatsworth – 4,800 sheep and 1,800 cattle
Coorong – 1,350 cattle

Pasture:
Chatsworth – cocksfoot, phalaris, ryegrass and sub-clover with 250ha of lucerne. Coorong – lucerne and veldt grass pasture mixes.

Soil:
Chatsworth – ironstone gravel and basalt loams
Coorong – sandy soils on limestone.

Rainfall:
Chatsworth – 550mm
Coorong – 480mm

LESSONS LEARNED

- Allow the next generation to create their own business.
- Freeing up capital provides more flexibility in the way assets can be handed over to non-farming offspring.
- If you take advantage of a market high, be prepared to wait for a low to restock. In the short term, renovate some pastures and either short-term lease or take on agistment.

INVASIVE ANIMALS

Taking on wild dogs in the far north

Brett Carlsson's new appointment as Senior Wild Dog Coordinator will provide much-needed support to north Queensland shires.

Northern and north-western Queensland producers now have more support for effective, coordinated wild dog control programs, with the appointment of an MLA joint-funded Senior Wild Dog Coordinator.

Brett Carlsson, a veteran of setting up successful wild dog management programs in central and south-west Queensland, will help producers from the Queensland coast to the Northern Territory border learn more about best practice control strategies and the latest tools, as well as provide support for community-based, landscape-scale management programs.

Brett said one of his biggest challenges was raising awareness of the impacts of wild dog attacks on livestock in northern shires.

"The added production costs and negative impacts on the cattle industry resulting from wild dog predation have been underrated for a very long time," he said.

MLA Donor Company and partners AgForce Queensland, Queensland Government via the Queensland Feral Pest Initiative program, South West Regional Economic Development Committee and Central Western Queensland Remote Area Planning and Development Board, have invested $940,000 for three years. This will extend the collation and management of the Wild Dog Impact Data Collection System to help inform research and development priorities.

Brett's responsibilities will also include supervision of coordinators in south-western and central western Queensland, with additional funding for these roles coming from Australian Wool Innovation.

"By working closely with producers, we have so far been able to gather input from 200 participants in central and south-west Queensland, providing valuable data on the impact of wild dogs on livestock and to biodiversity in these regions," Brett said.

MLA General Manager Producer Consultation and Adoption Michael Crowley said wild dog attacks and control activities in Queensland are estimated to cost the red meat industry and broader community well over $100 million annually.

"Costs aren't just limited to losses associated with predation, but also the impacts of disease transmission and subsequent limitations on enterprise choices," he said.

Michael said investment in this coordinator position, and extension of the shire-based, impact data collection system, links with concurrent investment in pest animal control research and extension (principally wild dogs and rabbits) conducted by the Centre for Invasive Species Solutions. ■

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pestsmart.org.au
Here you will find *The Glovebox Guide to Managing Wild Dogs* and the *National Wild Dog Action Plan.*

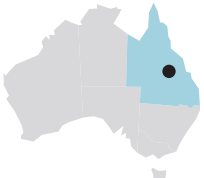
GENETICS

Up to the challenge

Visitors to Beef Australia 2018 were offered a farm tour with a difference – the chance to fly into 'Kaiuroo' and see the management strategies employed by managers Jennifer McCamley and Tom Emmery first-hand.

SNAPSHOT: Jennifer McCamley and Tom Emmery,

Kaiuroo aggregation, Central Queensland



Enterprise:
Brahman stud and commercial breeding and finishing for organic market

Livestock:
900 breeders, 3,000 commercial cattle

Pasture:
Natives, Buffel, irrigated leucaena undersown with Rhodes and Gatton panic

Soil:
50% native tablelands, 25% deep alluvial river flats, 25% brigalow scrub soils

Rainfall:
650mm

During the past four years, Jennifer McCamley (pictured opposite) and Tom Emmery, of Ag Resources Management, have nursed the Kaiuroo aggregation through the worst droughts and floods in living memory.

Three once-in-100-year events occurred in the past four years – the driest year, the highest rainfall in a 12-hour period and the highest flood level ever recorded. This was followed up by more flooding in March.

"Everywhere you look there is something damaged or not operational," Jennifer said.

Despite the environmental challenges, a commitment to good genetic selection, effective breeder management and pasture improvement is seeing them lift the productivity of the Kaiuroo Brahman stud and organic beef enterprise.

The enterprise is run on an aggregation of five conjoined central Queensland properties owned by the Rohatyn Group. The country ranges from prime river delta (at the junction of the Mackenzie and Isaac river systems) where young stock are finished on irrigated leucaena, to harsh tablelands where mature breeders are managed for optimum pregnancy rates.

Tom and Jennifer explained their management strategies to Beef Australia visitors. These included the following:

Breeder focus

"One of the best decisions we've made is to manage our commercial herd joinings according to seasonal conditions, rather than to a calendar," Tom said.

"Bulls are only put out after it's rained – in the past few years that's been as late as January and February – and we manage our mobs according to foetal ageing determined at pregnancy testing."

Cows are drafted into early or late pregnancies.

"If cows are too late getting back in calf, the option is to segregate them or sell them as pregnancy tested in calf cows," Tom said.

"The benefit has been far less age and weight variation in the calves and the cows are much more even in terms of body condition score.

"It also helps us manage our breeder condition and to control supplementation of lactating cows with calves of similar ages."

Tom and Jennifer supply cattle each month to Australian Organic Meats and have the benefit of almost 650ha of irrigated leucaena, undersown with Rhodes grass and Gatton panic, for finishing.

If conditions tighten, Jennifer said early weaning is their relief valve that ensures cows generally don't slip below condition score 3.

Genetic selection

Jennifer, the daughter of Sir Graham McCamley of Tartrus Stud, grew up understanding performance recording, genetic and, later, genomic selection.

Her commitment to improving the quality and quantity of performance data available for Brahmans has continued with the Kaiuroo Stud. The stud has become involved in an MLA Donor Company-funded project with the Animal Genetics Breeding Unit to enhance Brahman fertility traits described in BREEDPLAN.

"All our registered bulls and heifers are involved in the program and are being genotyped," she said.

"Bulls are recorded for sperm morphology, and heifers and lactating first-calf females are scanned to determine age of puberty and lactation anoestrus.

"The strong linkages of the Kaiuroo Stud to significant Brahman sire lines means this work will have real and positive ramifications at the breed level."

Culling is another aspect of the genetic improvement strategy for the commercial herd.

"The first cull of the heifers occurs before joining, with the focus being on temperament and structure. Any animal that does not make the grade is spayed and fattened on leucaena ready to be sold. After pregnancy testing, the empties go to the organic market," Jennifer said.

Sires selected to join to the commercial herd also have to meet a set of criteria.

"Importance is placed on calm temperament, structure, reproduction, growth and meat quality, and Brahman BREEDPLAN is a critical tool for us in this selection process," Jennifer said.

Technology

Kaiuroo has the benefit of investment by the Rohatyn Group in state-of-the-art flood irrigation, live-entry data-recording systems for all herds, and modern cattle-handling facilities with hydraulic gates and crush operations.

Jennifer believes safe, efficient stockyards are essential.

"We're working towards putting more safety features in our yards but we're also committed to training our staff in low-stress stock-handling methods," she said.

"It's really important to have quiet cattle that are happy to move about the yards calmly – it pays dividends right through the value chain." ■

LESSONS LEARNED

- Foetal ageing is an effective management tool to improve productivity and profitability.
- Quiet cattle pay dividends from producer to consumer.
- BREEDPLAN is becoming a more effective genetic selection tool as more high quality phenotypes and genomic information enter the analysis.

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BREEDPLAN:
breedplan.une.edu.au

Tips on growing leucaena:
mla.com.au/planting-leucaena

Calf survival checklist:
mla.com.au/calf-survival-checklist

FEEDBASE

More takers for grazing

The Jeffreys family were early adopters of dual-purpose crops in the traditional grazing country of NSW's south-eastern highlands. Their latest experiment: grazing cattle on dual-purpose canola.

Brothers John and Will Jeffreys operate Delegate Station Pastoral Company over three farms in the southern Monaro. While it's taken more than 10 years of trial and error, and system and variety testing, dual-purpose cropping has led to a unique farming system which matches the production and climate cycle.

"Dual-purpose cropping does two things: it allows us to sow early to accumulate dry matter prior to winter, and it pushes us out of the frost window at the other end of the season. This creates the potential to nearly double income per hectare through meat and grain revenue," John said.

Their enterprise consists of prime lamb breeding and trading (which contributes 60% to the enterprise), dual-purpose cropping (30%) and cattle breeding and trading (10%).

John and his wife Jen oversee the farms, while Will and his wife Meg live in Bungendore, where Will works in the meat processing industry and handles their lamb marketing.

The Jeffreys started growing dual-purpose crops in 2006 and learnt through trial and error, testing new varieties as they were released.

"We introduced them to spread our production risk between livestock and grain," John said.

"Conventional spring-type cultivars are not as well suited to our environment due to our growing season length, limiting yield and increasing frost risk.

"The dual-purpose crops enable us to use longer-season genetics – most of our crops are in the ground for 11 months."

Grazing tactics

The Jeffreys turn-off lambs from Christmas to September, with the crops providing high quality feed through autumn and winter.

Canola is planted in February, grazed from mid-April to August, and harvested in early January.

Lambs are rotated through several canola paddocks over four to five months, grazing each paddock for one month at a time. Lambs are sold to domestic and export markets as they come off crop.

Canola is grazed as per local guidelines – high stocking rates (up to 80 lambs/ha) once the plants are well-anchored with stock removed before bud elongation.

The crop is locked up in early spring, when nitrogen application and fungicide spraying begins.

Experimenting with cattle

Last winter, after the last lambs came off the canola, John decided to put some young cattle in.

"Carrying young cattle through winter can be a challenge here, and we only do it about one year in every three," he said.

"We usually just feed enough to maintain them; they will grow a bit, but most of the fattening is done in spring on low-cost perennial pastures."

While the sheep had eaten about 80% of the available dry matter in the paddock, John said 20% was still available for the cattle and was predominantly stalky, fibrous material, rather than "rich green leaf".

"It enabled the cattle to perform much better than I expected," John said.

"They went in as 320kg animals with individual gains between 400g and 1.4kg per head per day over 70 days of grazing.

"They were at least 80kg heavier than they normally would have been coming into spring, and we were able to turn them off a couple of months earlier than usual."

A fine line

John said there was a fine line between fully utilising a dual-purpose crop and overgrazing.

"You can't overgraze canola early on, in the leafy stage, but you have to be careful as you get close to lock-up," he said.

"As the crop matures towards the end of the grazing window, lambs tend to gnaw away at the growing point of the plant despite residual leaf material still available.

"The cattle were a good tool to utilise more dry matter in the paddock, while minimising damage to the growing point."

John said care needs to be taken to remove cattle once residual leaf stalks are eaten, as they will go for the growing point once they are out of feed – unlike lambs, which tend to preferentially graze the growing point prior to lock-up.

"Damage to the growing point tends to promote tillering of the plant and leaves the stem prone to rotting," he said.

"The crop looks okay well into grain fill but weak stems snap at the base and grain stops filling."

John said the cattle did not trample the crop or damage the paddock, but it was a dry winter and they were grazing on a hilly, well-drained paddock.

"The minute it got wet the cattle had to be off the paddock," he said.

canola

Jen and John Jeffreys with their son James and twin daughters Amelia and Georgina.

The pay-off

According to John, a good grazing canola crop usually produces 3–6 tonnes of dry matter per hectare (t DM/ha) and grows 400–600kg of lamb/ha.

"Last year the canola produced about 3–4t DM/ha and we grew about 350kg lamb/ha and just under 100kg beef/ha, without changing our lamb program at all," he said.

"Grain harvest on these paddocks grazed by the cattle averaged 1.7t/ha in a dry spring, however heavily grazed crops have previously yielded over 3t/ha.

"We're predominantly a lamb enterprise and wherever we can we maximise our stocking rates through the winter with lambs, not cattle.

"However, after doing this I'm confident that, given another scenario where we think there is dollar to be made from cattle, we will manage our grazing canola to chase the sheep with a mob of cattle." ■

delegatestation8@bigpond.com

SNAPSHOT:

John and Jen Jeffreys and Will and Meg Jeffreys, 'Delegate Station Pastoral Company', Delegate and Bombala districts, NSW

Area:
4,000ha

Enterprise:
Prime lamb breeding and trading, dual-purpose cropping of canola, wheat and barley, cattle breeding and trading

Livestock:
9,000 composite ewes and 200 Angus cows

Pasture:
Breeding pastures are phalaris, fescue, sub and arrowleaf clover.

Finishing pastures are chicory/perennial clover (high rainfall) or lucerne/annual clover (low rainfall).

Soil:
Granite (35%), sedimentary loam (50%) and basalt (15%) soil types

Rainfall:
550–750mm across the three farms

Tips for grazing dual-purpose canola

MLA has funded a number of projects in recent years to establish the agronomy and grazing regimes around grazing canola, building on extensive research conducted by GRDC, CSIRO and others.

Michelle McClure from Southern Farming Systems led one of the recent MLA-funded projects, comparing the net benefits of grazing spring-sown, dual-purpose canola with a perennial pasture livestock system.

Here Michelle shares some tips for grazing dual-purpose canola in the high rainfall zone:

- Make sure paddocks are well-prepared for sowing i.e. good weed control, adequate moisture and nutrients, friable seedbed.
- Follow recommended seeding rates, as good crop establishment – 40 plants/m^2 – is essential.
- Use twist and pull test to ensure plants are well-anchored before grazing.
- Rotate stock between paddocks of green feed to minimise rumen adjustment issues.
- For final grazing, graze evenly and leave 1.5t/ha residual biomass for plant recovery.
- Remove stock before buds (the reproductive parts of the plant) are elongating above the ground and can be removed by grazing stock.
- Seek agronomic advice to ensure adequate nutrients are applied to crops after grazing to boost yield. ■

mla.com.au/dualpurposecrops

INVASIVE SPECIES

Taking biological control

t is estimated more than $250 million/year could be delivered in productivity gains and cost savings following the introduction of biological control agents for six of Australia's invasive weeds.

'Natural enemies' such as insects, mites and diseases to control parkinsonia, parthenium, blackberry, silverleaf nightshade, cylindropuntia and gorse, which impact more than 25 million hectares across Australia, have been introduced through the Rural R&D for Profit program 'fast-tracking and maximising the long-lasting benefits of weed biological control for farm productivity' project.

The three-year project was managed by MLA working with national and state-based research organisations, universities, Landcare groups and local land management authorities.

In addition to individual projects focusing on the six weeds, the project also delivered a new partnership model to ensure the ongoing funding and prioritisation of weed biocontrol and the development of the online Biocontrol Hub and supporting smartphone app.

In this edition of *Feedback* the focus is on the work on the cylindropuntia project. Further projects will be featured in upcoming editions.

This project is supported by funding from the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit program. ■

Find the Biocontrol Hub at: biocollect.ala.org.au/biocontrolhub

A prickly problem

For sheep producers Peter and Elizabeth Clark, discovery of a successful biocontrol agent for boxing glove cactus has given them a practical, affordable control strategy.

Peter Clark (front) collects samples with help from Elizabeth Clark, Barney Kent and Peter Jones.

LESSONS LEARNED

- Biocontrol of weeds can be successful.
- Herbicide application is still needed to control sparse boxing glove infestations.
- Release management is as important as having the right biocontrol agent.

The producer experience

It's not every day an insect is described as "an absolute godsend", but for Peter and Elizabeth Clark the cochineal biocontrol agent *D. tomentosus* ('cholla' biotype), aimed at controlling boxing glove cactus (*Cylindropuntia fulgida var. mamillata*), is exactly that.

For almost 40 years the Longreach producers have worked tirelessly and invested more than $250,000 on herbicide and predator fencing in attempts to control their cactus problem.

Herbicide had to be applied "until the plant was dripping" and predator fencing was aimed at reducing cladode (the flattened stem of the plant) spread by kangaroos and goats.

However, the couple admitted that prior to the biocontrol agent release on their property in March 2016, they were barely holding ground.

"It's basically a pot plant gone wild," Elizabeth said.

"It's been around here since the 1960s but it took a long time for the community to realise it was a problem. It took even longer to correctly identify it and work out how to tackle it."

Elizabeth said the plant's toughness, ability to thrive in dry conditions and reproduce prolifically has created a control challenge.

"It's relentless. We had a patch we sprayed four times, we couldn't spray it one year and it got away on us again," she said.

"Dense plantings are also difficult to spray effectively and if you don't spray the entire plant to run-off, it won't die. It's also very easy to miss juvenile plants."

The biocontrol project

In March 2016, Elizabeth and Peter became enthusiastic participants in a new collaborative biocontrol project, funded by the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit program, MLA, NSW Department of Primary Industries and the Queensland Department of Agriculture and Fisheries.

Led by Andrew McConnachie, weed biocontrol research leader for NSW DPI, the project staged its initial release of *D. tomentosus* ('cholla' biotype), a cochineal (a type of sucking scale insect) on boxing glove cactus at Leander Station.

"We did a single release on a 1ha test plot and, within 16 months, 100% of those plants were infected with cochineal and 95% of the plants had died," he said.

Andrew said the method of release was just as important as the species of cochineal to this biocontrol success story.

"Cochineal are spread by the wind, they're blown from one plant to another, so it's important to place them on the upwind side of the plot," he said.

"It's also horses for courses. Cochineal is a very effective control agent on dense plots but less effective on sparse plantings where it is more difficult for the insect to infest the next cactus."

In late 2017, the project released another cochineal biotype (*D. tomentosus 'californica var. parkeri'*) at two Hudson pear sites in northern NSW and has made a further 34 releases of *D. tomentosus* ('cholla' biotype) on boxing glove cactus at sites across Queensland, WA and NSW.

Andrew said the Queensland Department of Agriculture and Fisheries recently released another cochineal biotype ('bigelovii') on snake cactus and there are plans afoot to release the '*acanthocarpa X echinocarpa*' biotype on brown-spined Hudson pear and the 'cylindropuntia' biotype on pencil cactus and Klein's cholla. ■

A weed with fight

Weed: *Cylindropuntia* spp. (includes rope pear, prickly pear, boxing glove cactus, Hudson pear)

Where it grows: Inland and sub-coastal regions of southern Queensland; NSW; north-western Victoria; south-eastern South Australia, and the NT.

Damage/threats: Reduces agricultural viability and land values; potential injury to people and animals.

Traditional control: Herbicides and an earlier biological control release in the 1970s with limited success.

Challenges: For effective biological control, each *Cylindropuntia* spp. requires a certain biotype of the cochineal insect *Dactylopius tomentosus*.

Biocontrol solution: Identification and widespread dissemination of correct cochineal biotype for each species.

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Andrew McConnachie
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SNAPSHOT: **Peter and Elizabeth Clark,** Longreach, Queensland

Area:	Enterprise:	Livestock:	Pasture:	Soil:	Rainfall:
11,000ha	Merino breeding	3,000 sheep including 1,200 ewes	Mitchell, Flinders	Cracking clays, red sand, river flats	400mm

BUSINESS MANAGEMENT

A fresh perspective

Drought, a change in enterprise and engaging the next generation prompted Cunnamulla sheep producer Kym Thomas to look for support and tools to drive her enterprise forward.

Kym runs commercial and stud Australian White flocks with her son Tony Reid (pictured with Kym and his sister Chantal) and husband Greg Dunsdon.

Their home property, 'Kahmoo', has been in her family since 1911 and has weathered many changes.

In 2001, the family moved away from their traditional Shorthorn and Merino enterprises, selecting trade cattle and meat sheep for flexibility in the face of climate variability.

The ongoing dry is reflected in stocking rates – the family once ran 23,000 Merinos but, after several severe drought years, the flock is back to 3,500 ewes plus lambs (from the general 8,000 ewes).

Declining rainfall has been compounded by a surge in kangaroos and wild dogs. In 2013, Kym estimated there were 30,000 kangaroos, compared to 6,000 ewes. Fencing (10-strand plain wire electric fences powered by solar and mains electricity) and mitigation permits have been effective.

Another challenge has been the learning curve of managing and marketing meat sheep.

The family achieved organic certification to tap into premium markets and to support direct marketing, collaborating with neighbours to coordinate logistics and create consistent supply to customers.

Kym completed the business transition with her parents, Anne and Geoff Thomas, a decade ago.

She was mindful of establishing a succession plan when Tony returned to Kahmoo, after leaving school and working on NT cattle stations and a NSW sheep stud to gain a wider perspective.

"Drought and changing markets have highlighted risk in our business, so I was really looking at where Tony and I wanted the business to head," Kym said.

"I knew I needed support and a network; when I heard about the Agri-Business Development Institute (ABDI) business mentoring program it ticked all the boxes."

Kym and Tony finished the 12-month program, which was developed and supported with funding from MLA Donor Company, with a clear direction and shared long-term goals.

"The program gave Tony confidence in where he can take the business, and me the confidence to let him have a go," Kym said.

"We were both able to acknowledge our expectations and have clarity in our shared vision."

This vision is to run a profitable multi-generational business, to find opportunities to supply lambs into high-end markets and to explore export potential.

"The program emphasised that our goal has to be to put money into our grass and view the property as a business, not a lifestyle – yes, Kahmoo is our home but we can't let emotions control the business."

Kym and Tony have taken steps to drought-proof the business by purchasing a property at Inverell, NSW, to finish lambs and maintain their stud rams, enabling control of supply and consistent turn-off.

They also identified their specific roles in the business and any skills gaps, and now outsource many functions, including marketing and auditing.

"Tony and I both prefer to be outside, but I recognised that what happens in the office is integral to the success of our business," Kym said.

"Tony now manages the operations and, while I support him in that, my main role now is expanding the business, with him involved every step of the way."

Kym said she came away from the program excited about the possibilities.

"Mindset is so important, especially during drought," she said.

"It was terrific to get off the property and meet people with similar mindsets; this network has been so valuable.

"The program has been a worthwhile investment for us – we have far greater confidence to progress the business with a well thought-out, long-term growth plan."

Kym and Tony are focusing on improving their marketing and product branding, and will soon trial their lamb with selected restaurants and high-end city butchers.

This work is being done through an MLA Donor Company Producer Innovation Fast-Track project. ■

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Agri-Business Development Institute:
abdi.com.au

MLA Donor Company:
mla.com.au/mdc

Agri-Business Development Institute programs:

- Free webinars on business management and business growth issues facing the agribusiness owner
- 12-week intensive courses to provide the fundamentals of an effective business
- 12-month business mentoring programs, including a strong focus on beef, sheep and broadacre businesses. Business mentors work with participants to keep them accountable over the 12 months, as they make planned changes in their business.

Upcoming events:

12 month Agri-Business Management Program (MDC supported):

- 20–21 September – Wagga Wagga, NSW

Three month 'Agri-Business by Design' Fast Track Business Program:

- 19–20 July – Emerald, Queensland
- 16–17 August – Lismore, NSW
- 6–7 September – Armidale, NSW

SNAPSHOT: Kym Thomas, son Tony Reid and husband Greg Dunsdon, Cunnamulla, Queensland and Inverell, NSW

Area: 33,184ha

Enterprise: Sheepmeat production

Livestock: 8,000 Australian White breeding ewes

Pasture: Herbage, Mitchell, Flinders and buffel grasses, diverse scrub foliage

Soil: Heavy black soil to lighter soil

Rainfall: 350mm

ANIMAL HEALTH

Sheep diseases under the microscope

A $3 million, three-year investment will help reduce the incidence and costs of endemic health conditions affecting southern Australia's sheep flock.

The endemic sheep diseases to be investigated currently cost Australian producers about $140 million/year in lost production.

The 'Reducing the financial impact of endemic conditions in sheep' project, funded by MLA Donor Company and the SA Sheep Industry Fund, will see 21 sheep health issues recorded and communicated.

A feature of the project will be the engagement of University of Adelaide veterinary academics, along with a post-doctoral researcher, to investigate the epidemiology (disease prevalence and distribution, and changes over time) of certain key diseases.

The university will analyse the 10 years' worth of data already collected by Thomas Foods International for the SA sheep industry. This data comprises approximately 35% of Australia's sheep health data. ■

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How to minimise the impact of four major endemic sheep diseases

	Arthritis	Rib fractures	Grass seeds	Pneumonia or pleurisy
Causes	Bacterial contamination of wounds at marking and mulesing, or of umbilicus at birth. Incorrect tail docking increases risk of infection.	Fractures to ribs of lambs with mineral deficiencies or imbalances. Fractures are sustained during handling.	Problem grasses and weeds, particularly spear, brome, barley, silver and Chilean needle grasses or geranium.	Combination of infection (e.g. bacteria, viruses, parasites or fungi), environmental factors (e.g. hot, dry, dusty) and poor lamb immunity (e.g. stress, nutrition).
Producer impact (on-farm)	Growth rates, carcase composition, lambing percentage and wool growth affected. Compromised welfare and on-farm culling of animals not fit to load.	Slow maturation and later turn-off (about three weeks). Poor animal welfare outcomes.	Reduced growth rates (post-weaning live weight gain can be reduced by up to 50%). Reduced wool production and value. Deaths due to bacterial infections, flystrike, tetanus, blindness and starvation. Poor animal welfare outcomes.	Reduced growth rates, weight loss, cost of treatment and deaths. Poor animal welfare outcomes.
Processor impact	Affected joints trimmed, average of 0.75kg/carcase. Reduced carcase weight and value. If four or more joints affected, whole carcase condemned.	Trimming of fracture sites, reduced carcase weights and carcase value (loss of primal cuts).	Up to $1.50/kg penalty may be imposed for reduced throughput, excess labour and trimming time and product downgrading (reduced carcase value). Reduced carcase weight and skin value. Carcase condemnation if carcase shows signs of pre-slaughter fever or sepsis.	Carcase trimming and reduced carcase weight and value. Carcase condemnation if infection is recent i.e. pus in chest cavity.
Producer actions	Follow correct marking, mulesing and shearing management, including tail-docking procedure: ensure three or more vertebrae are retained in tail stump. Consider vaccination against the most common causes of arthritis.	Ensure adequate nutrition in pregnant and lactating ewes; provide rations that are complete and balanced. Use management strategies – gentle handling, minimise yarding frequency, identify hazards, reduce sharp objects, fit drafting gates with rubber trim, etc.	Consider a mix of strategic grazing, livestock and agronomic management, plus production management such as target market and turn-off strategies.	Optimise stock health and minimise stress when yarding and mustering. Use careful drenching technique and don't plunge-dip thirsty sheep. Consult your vet to investigate on-farm flock health issues and deaths.
Producer resources	*A producer's guide to sheep husbandry practices* Find it at: mla.com.au/publications and click 'Search publications'. See sections on lamb marking, castration and tail docking.	makingmorefromsheep.com.au; search 'copper deficiency'. Complete webinar on impact and management of rib fractures: tinyurl.com/y9q83ctg.	*Winning against seeds booklet:* mla.com.au/winningseeds mla.com.au/grass-seeds Winning Against Seeds YouTube clip: youtube.com/watch?v=F8H5F9lvkXc	Enhanced abattoir surveillance program fact sheets: pir.sa.gov.au; search 'enhanced abattoir surveillance'.

Sheep health data fed back to the farm

Clare Valley sheep producer Jane Kellock is delighted South Australia's sheep health monitoring program will be expanded during a MLA/SA Sheep Industry Fund project.

Jane and her husband Greg farm at Farrell Flat, east of Clare, and she's also chair of the South Australian committee of the Southern Australian Meat Research Council (SAMRC).

"In SA we've had the Enhanced Abattoir Surveillance program since 2007," she said.

"It's been monitoring 21 endemic diseases at Thomas Foods International Murray Bridge, and Lobethal, and providing feedback to producers when a health issue is found.

"As part of the new project, the monitoring will be expanded to include JBS Bordertown, and the feedback will also be available via MLA's Livestock Data Link application.

"The project is looking at how we can get this information out to producers in the most time-efficient and effective manner. Having the information sooner and through multiple sources will give all of us more options and time to act on the information before the next load of lambs go on the truck."

As livestock producers, the Kellock family understand the value of abattoir feedback.

"I've had feedback from producers in the past where they didn't know they had an issue with pleurisy and pneumonia until they received notification from the abattoir," Jane said.

"Once they knew, they could do something about it."

As well as her role with SAMRC, Jane is a member of Livestock SA's Sheep Industry Blueprint working group.

The blueprint was launched in April 2016 with the aim of increasing sheep industry productivity by 20% by 2020, and facilitated the initial set-up of the MLA/SA Sheep Industry Fund project.

"The pleasing part for me is that Biosecurity SA, Adelaide University and the abattoirs are working in collaboration on this project," Jane said.

"The collaboration will bring together industry experience, research talent and practical, on-ground knowledge.

"It's exactly the sort of thing we aim to do through the blueprint and SAMRC to get the best outcomes for producers." ■

SNAPSHOT:

Greg and Jane Kellock,
Farrell Flat, SA

Area:
2,500ha

Enterprise:
Cropping, self-replacing Merino flock, lamb feedlot and cattle

Livestock:
4,500 Merinos, 2,000 crossbred lambs and 40 cattle

Pasture:
Improved pastures and lucerne flats

Soil:
Red loamy clay

Rainfall:
450mm

Jane Kellock
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The Kellock family: Samuel, Greg, Ellie, Annie, Matt and Jane.
Photo by Heidi Hodge Photography

A QUESTION OF ETHICS

The people behind Red Eight Produce knew there was consumer interest in ethically-produced red meat – they just never would have imagined what a diverse crowd would make up their future customer base.

New England NSW sheep and cattle producers Anita Taylor and Sarah Burrows (pictured above), co-founders of Red Eight Produce, have just completed the first two of three phases of an MLA Donor Company Producer Innovation Fast-Track project to find out exactly what customers want in ethically-produced meat and how to deliver that to them.

This knowledge is being used to underpin the development of on-farm mobile and modular animal processing systems to provide meat for sale through ethical butchers.

"We found people are prepared to pay more – up to double – for ethically-produced meat. The variety of that future customer base was astounding. There wasn't one particular stereotype," Anita said.

Red Eight Produce's research also found consumers interested in ethically-produced meat want to know where all the parts of their meat come from, that the animal was treated ethically and produced sustainably for the whole of its life.

"Survey participants did not want to know the details of the processing, but they wanted to deal with a company that was trusted to carry it out with animal welfare and ethics as the first priority," Sarah said.

The Producer Innovation Fast-Track had them looking at their concept from new angles.

"Fast-Track was really intense and there were times we thought our mentor had pushed us too far," Sarah said.

"But it turns out it was just preparing us for the road ahead."

Extensive consumer research and investigations of paddock-to-plate supply chain systems saw Sarah and Anita "remove the rose-tinted glasses" and dismiss earlier concepts such as online retailing.

The innovation project process also stopped the pair from rushing in and importing a mobile processing unit from the United States which, in hindsight, was a godsend.

As a result, while they've had to design a mobile unit from scratch, Sarah and Anita believe they will end up with a far more versatile system.

A 'slowly, slowly' approach is employed with a single modular system for beef processing being developed initially. Anita and Sarah are completing design works which meet the challenges of being light and robust.

"In no way are we competition for the large-scale meat processors, a highly professional sector playing an important role in delivering protein to the world," Sarah said.

"We're only focused on a sector of the market which will empower producers and communities to attach value to meat production right through to the ethical consumer." ■

red8produce.com.au

Teys 'turns on' beef DEXA

Objective measurement for the beef industry took another step forward with the commissioning of beef DEXA technology at Teys Australia's Lakes Creek processing plant at Rockhampton.

Teys Australia has installed the first beef DEXA (dual-energy X-ray absorptiometry) unit to specifically provide producer feedback on carcases.

Federal Minister for Agriculture and Water Resources, David Littleproud (pictured right with MLA's Richard Norton), switched on the machine for the first time during Beef Australia 2018, effectively starting the commissioning phase of the technology. It is planned producer feedback from DEXA will be available later this year.

DEXA technology provides a scientific measurement of carcase lean meat yield, bone and fat. The technology installed by Teys will have the capacity to measure up to 500 sides/hour.

Teys Australia General Manager – Corporate Services Tom Maguire said Teys had invested $2 million in the beef DEXA technology at the Lakes Creek facility.

"It's going to be a game-changer for the beef industry," Tom said.

"It will give enhanced feedback to producers, enabling them to make better genetic decisions and target the best market globally for the beef they produce."

Minister Littleproud said the Federal Government had invested $10 million with MLA (via MLA Donor Company) to help roll out DEXA technology.

"It's taking cutting-edge technology, making sure we can give market intelligence back to the producer and giving us integrity through the supply chain," he said.

"We should be proud of the fact that Australian innovation created this." ■

mla.com.au/DEXA

New carcase information available

The Livestock Data Link app has two new features to help beef producers maximise carcase value and improve genetic gain.

The Integrity Systems Company, a wholly-owned subsidiary of MLA, created Livestock Data Link to allow producers to efficiently receive, analyse and compare carcase results for compliance, animal health information and more.

The new functionalities are:

1. Predictive lean meat yield (LMY)

"LMY is the percentage of meat recovered from a carcase and so is a key driver of profitability for beef producers, processors and retailers," Integrity Systems Company's CEO Dr Jane Weatherley said.

Available for sheep producers and processors through Livestock Data Link since 2015, it is already used by around 8,000 sheep producers and will be available on all MSA-graded beef carcases.

The predictive beef LMY is based on hot standard carcase weight, MSA graded rib fat depth and, where available, eye muscle area.

Jane said it was important producers look at the MSA index, which indicates predicted eating quality, as well as the LMY measure.

"Because beef carcases with higher LMY have more muscle and less fat, there is generally a negative relationship between LMY and the MSA index," she said.

"Nutrition and genetics impact both LMY and eating quality, so producers can use feedback about them to inform management decisions and maximise carcase value."

2. Breeder report

The second new feature enables breeders to access information about animals they have bred but not directly consigned to the processor. Already available to NSW and Victorian producers, it will now be rolled out to producers in all states.

"This is a significant step forward in how feedback is shared across the supply chain," Jane said.

"Previously LDL only released data to the Property Identification Code (PIC) from which animals were consigned. The new breeder report provides carcase feedback to the breeder's PIC as identified via the NLIS tag."

The Integrity Systems Company is also working to include beef animal health data in Livestock Data Link. A proof of concept project involving JBS Brooklyn, Wingham Beef Exports and Northern Cooperative Meat Company is underway. ■

Information: mla.com.au/integrity

Steaking a claim on the menu

A chat with MLA's Corporate Chef and Foodservice Business Manager Sam Burke is guaranteed to get your mouth watering.

He's unashamedly passionate about serving up beef and lamb – an essential trait for someone who partners with chefs across the country to keep Australian red meat on their menus.

Sam recently joined forces with national chain The Coffee Club to reinvent an Australian classic: the steak sandwich.

Beef, the lunchtime staple

The Coffee Club launched three new steak sandwiches in nearly 300 restaurants across the country the week after Easter, promoted with MLA's message 'Australian Beef: the Greatest'.

"While red meat is often seen as a dinner meal, MLA and The Coffee Club worked together to position beef as a lunchtime favourite," Sam said.

The partnership began in October 2017, when MLA pitched ideas to The Coffee Club's parent company, Minor Food Group International (which operates casual dining brands globally) to champion Australian red meat on the menu.

Sam and MSA Retail Training Facilitator Kelly Payne ran a red meat immersion and butchery course for Minor Group chefs. Sam then worked with Global Head of Culinary James Bradbury and Culinary Manager Kenneth Bryce to create the new recipes.

"Sam and Kelly displayed an invaluable wealth of experience and understanding of MSA grading and cuts," Kenneth said.

"This knowledge helped us explain to suppliers what our business required to create products that were suitable in our kitchens and exceed the expectations of all stakeholders."

The final cut saw an Aussie BBQ Steak Sandwich, a Signature Steak Sandwich and Spicy Steak Sandwich earn a place on The Coffee Club menu as limited-time offerings until June 2018.

Sam said developing new dishes requires collaboration and a deep understanding of the specific foodservice business.

"The process was a partnership between MLA and The Coffee Club to develop a tailored solution that met their commercial requirements," he said.

Consistency is key

The Coffee Club's franchisee model meant the recipes had to be replicated by hundreds of chefs to deliver consistent flavour and quality and needed to use existing items in their pantries.

To achieve this, The Coffee Club revamped the beef cut used in the existing steak sandwich (opting for a 100-day, grainfed rump steak which suited the conveyor oven used in their kitchens), replaced the original ciabatta bread with toasted sourdough and improved the flavour profile.

The 100-day grainfed steak will be a permanent steak of choice for all steak dishes at The Coffee Club.

Australian red meat producers are part of the story, with The Coffee Club promoting their new menu items as a 'celebration of Australian beef and Aussie farmers'.

"The Coffee Club's most recent promotion celebrates the brand's Australian heritage through showcasing Aussie farmers and their produce," Kenneth said.

"We recognise the importance of supporting local farmers and providing the freshest-quality ingredients for our customers." ■

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The Coffee Club
coffeeclub.com.au

RED MEAT MAGIC FOR MENUS

MLA's popular beef and lamb advertising campaigns are just one aspect of domestic marketing. Backing them up are 'behind the scenes' foodservice activities.

"MLA is on the ground partnering with foodservice businesses and developing innovative red meat menu items that match their requirements, budgets and culinary skills," MLA's Corporate Chef and Foodservice Business Manager Sam Burke said.

Sam shared the following examples of projects which have delivered outcomes in the past year.

Spirit Hotels (operated by Coles)

MLA has collaborated with Spirit Hotels since 2014 to provide advice on steak and develop innovative dishes. These dishes are to showcase Australian beef and lamb at the 89 Spirit Hotels venues, including icons such as Brisbane's Regatta Hotel.

Sam leads culinary masterclasses biannually for bistro chefs and the Roadhouse Grill chefs of Spirit Hotels to develop new dishes for summer and winter menus.

Spirit Hotels' National Food Manager Gary Johnson said the masterclasses reinforce the fundamentals of cooking the perfect steak and provide guidance on new cuts and techniques.

"Sam is the conduit from producers to consumers – he translates beef and lamb products into 'chef's language' to keep the foodservice industry connected to the red meat world, and vice versa," Gary said.

"He's provided Spirit Hotels chefs with fantastic ideas on everything from preparing boutique steak cuts through to techniques to turn secondary cuts into innovative, enjoyable dishes."

Dishes Spirit Hotels added to their menu as a result of MLA's culinary masterclasses included:

- **the *'best steak sandwich'*: more than three tonnes of beef was sold in steak sandwiches in the first month of promotion**
- ***roast beef and gravy roll with crispy onions*: 7,300 units were sold across Spirit Hotels' sports bars nationally during an eight-week promotion in 2017**
- ***Australian lamb mixed barbecue plate*: 1,500 diners devoured this limited-time offer, which coincided with MLA's 2018 summer lamb promotion**
- ***beef hoagie roll with bourbon barbecue sauce and pickled jalapenos*: one tonne of beef was consumed in these dishes during the eight weeks on the menu in February–March 2018.**

"Our message to red meat producers is to keep doing what you're doing – if you produce quality beef and lamb, we will follow our mantra of 'excellent execution every time'," Gary said.

Sodexo

In February 2018, Sam Burke and MSA Retail Training Facilitator Kelly Payne hosted a masterclass for chefs and food development experts at Sodexo, one of the world's largest facilities-management and catering companies.

Sodexo serves 100 million consumers each day in 80 countries and serves more than 40,000 meals/day in Australia.

Sodexo feeds more than 6,000 people three meals a day through their mining sector contracts in the Pilbara, WA, with hungry 'fly in, fly out' workers devouring 17.5 tonnes of beef and 5.6 tonnes of lamb in March 2018 alone.

Every red meat item MLA worked with Sodexo to put on the menu equates to 1.2 tonne of protein.

The class, held in conjunction with Unilever Food Solutions, included a butchery session and demonstrations of how to use various cuts in dishes such as tandoori roast lamb and a beef Reuben sandwich.

Sodexo Food Platform Director Tim Hartley said partnering with MLA since 2015 has helped Sodexo incorporate food trends in its Australian and global businesses.

"With assistance from Sam, we've been able to display current trends in food using his ideas in our menus, and through the design of limited-time offers in our taverns and canteens," he said.

"MLA continue to assist and support our business through their promotion material and menu items."

MLA also worked with Sodexo to develop other red meat promotions across their corporate and education hospitality services (which include boarding school catering and workplace cafeterias), including an Indian-inspired lamb pita pocket and beef po' boy sandwich.

Ribs & Burgers (Seagrass Boutique Hospitality Group)

Last year, MLA worked with the Ribs & Burgers chain to develop a premium double cheeseburger across the modern casual dining business's 19 Australian restaurants.

The burger features two Angus Australia hand-formed patties, American cheese, Spanish onion, pickle, aioli and ketchup.

This resulted in a 45% increase in sales of Australian beef on the Ribs & Burgers menu in October–November 2017, compared to other proteins. The Australian double cheeseburger was the most popular of 110,000 burgers sold. ■

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Spirit Hotels: ourhotels.com.au
Sodexo Australia: au.sodexo.com
Ribs & Burgers: ribsandburgers.com/au

KEEPING LAMB ON AUSTRALIA'S PLATE

What do actress Naomi Watts, comedian Sam Kekovich and newsreader Lee Lin Chin have in common? They've all played the 'Lambassador' role in at least one of Australian lamb's famous – and occasionally infamous – advertising campaigns.

MLA's heavily-anticipated campaigns, which have appeared on television screens for more than a decade, have cemented themselves in the national conversation for their humorous portrayal of lamb as a 'celebration dish' which brings Australians together.

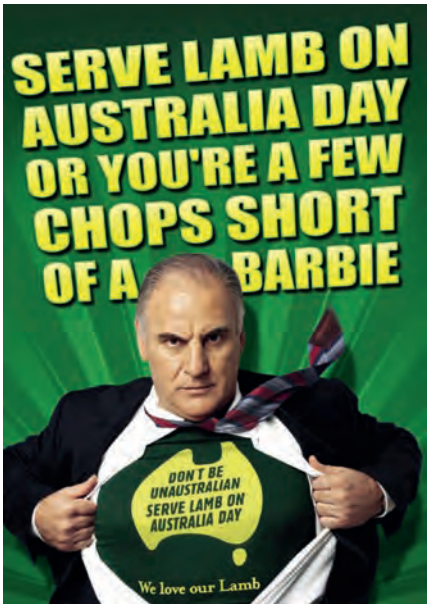
This year marks a turning point as MLA's domestic marketing team looks to evolve the lamb brand with a more personal take on the message 'You Never Lamb Alone'.

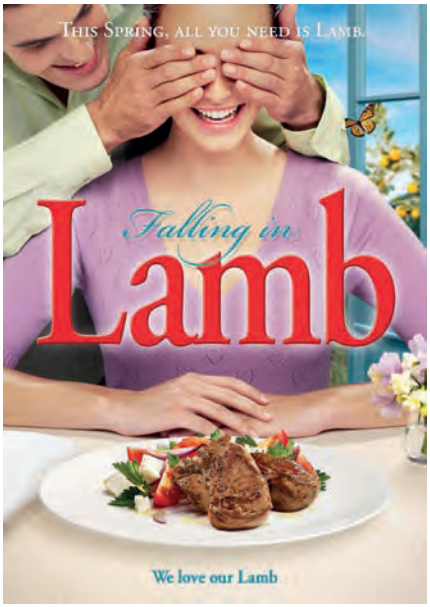
The man in charge of the next chapter is Graeme Yardy, who took up the reins as MLA's Domestic Market Manager at the start of 2018.

Graeme, who has worked with producers to tell the story of food at companies such as Horticulture Innovation and Mars Food, said lamb is ingrained in the Australian psyche.

"We're a nation built on the sheep's back, and lamb has been an important source of protein for generations," he said.

"Our love of lamb evolved with the waves of migrants from the UK, Greece and the Middle East who brought their cultural associations with lamb and their love of communal meals."





To capture this emotional connection to lamb, MLA has promoted it as the protein that brings together families (who could forget a young Naomi Watts turning down a date with Tom Cruise in favour of her mum's lamb roast in the 1989 campaign) and the nation as a whole, with more recent campaigns uniting cultures and generations.

"What MLA does well is present an opinion that cuts through the myriad of messages confronting consumers," Graeme said.

"We present messages which make people stop, think, and turn to others to discuss."

The challenge is how to take the lamb campaign to the next level.

While the finer details of the 2018 campaign are being worked out, Graeme promises lamb will evolve from a protein which unites the nation to one which brings families, neighbours and workmates together.

MLA uses research such as the annual *Global Insights report*, which tracks consumer buying habits and attitudes to protein. MLA also uses the detailed *Usage and Attitudes study* to guide marketing investment.

"The emerging challenge for lamb is how to stay relevant to a new, younger generation of consumers who don't have the same emotional connection to lamb as their parents," Graeme said.

"This generation eats out a lot, doesn't have cooking skills and wants convenient meal choices."

To encourage this generation to love lamb, MLA will work with celebrity chefs who have a personal story to tell about sharing lamb as a family.

The campaign will also use smartphone technology to send relevant lamb messages at key times of the day, when consumers are thinking about what to eat for dinner.

Lamb will also play a role in bringing social issues such as diversity down to a personal level, to show that, although people may have many differences, they also have similarities which should be celebrated.

"Of course, we'll do this in our signature MLA style. We want to challenge people and get them talking – hopefully over a lamb dinner," Graeme said. ■

Graeme Yardy
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MLA YouTube channel: youtube.com/meatandlivestock

Facebook: We Love our Lamb

ON THE SMALL SCREEN

Television commercials are just one facet of how MLA promotes lamb, and they're backed by retail and foodservice activities designed to grow the market share.

"As well as creating what we marketers call the 'mental availability' of consumers to think about lamb, MLA plays an important role in matching what they see in the ads to what is available in store," Graeme said.

"If someone watches a lamb ad, then goes to the butcher to choose dinner, we want them to see a 'You Never Lamb Alone' sticker on the display cabinet. It's about layering and reinforcing the message."

And it's working, with lamb sales during the key campaign periods of summer, autumn and spring the highest of the year.

"Australia is the number one market for Australian lamb, with Australians spending around $2.3 billion on lamb and consuming around 9kg/head, one of the highest volumes in the world," Graeme said.

"We need to protect this market by ensuring home-grown red meat remains relevant to Australian consumers."

HAPPY **HUMP DAY**

The Smokin' Yak's Gary Polkinghorne (left) working the barbecue at Beef Australia 2018 with employee Chris Harth.

There was plenty of beef on the menu at Beef Australia 2018, but one of the most popular choices was slow-cooked Brahman hump from The Smokin' Yak.

More than one tonne of the Texas-style slow-cooked meat was consumed during the week-long event.

The Smokin' Yak is the brainchild of Marlborough, Queensland Brahman breeding families – Matthew and Fiona Noakes of Solo Brahmans and Gary, Sharon and Alison Polkinghorne of Copperville Brahmans.

"This started off as a breed promotion, but it's just grown and grown," said Matthew, who designed and built the Texas-style barbecue used to cook the humps.

When cooked 'low and slow' for 10 hours over rosewood, the high level of collagen and connective tissue in the lower-value cut breaks down and turns it into a moist, tender product with a slightly smoky flavour.

"Rosewood has almost a Turkish Delight smell – it's a sweet, rosy smell and I think it imparts that a little bit on the meat," Matthew said.

"It's real carnivore food – only a simple salt and pepper rub is used to enhance the real beef flavour of the hump.

"We serve it sliced about as thick as a HB pencil, the same as the Texans do with their brisket, with a range of accompaniments."

The Smokin' Yak is a participant in the MLA Donor Company (MDC) Producer Innovation Fast-Track program.

Matthew said the Fast-Track program had provided the business with great advice as it navigated its way through growing the business and branching out into value-added product.

"We've been attending expos, food festivals and catering for private functions for the past couple of years, and we've launched our pastrami and vacuum-packed, ready-to-eat, sliced Brahman hump, which you can take home and eat cold or re-heat," he said.

The Smokin' Yak is now eyeing a greater audience, with the team contemplating the logistics of further growth. "At the food festivals that we go to, we're not preaching to the converted. We have people who've never had a beef experience like this, and often at the events we go to, we're the only beef product there competing with chicken or seafood," Matthew said.

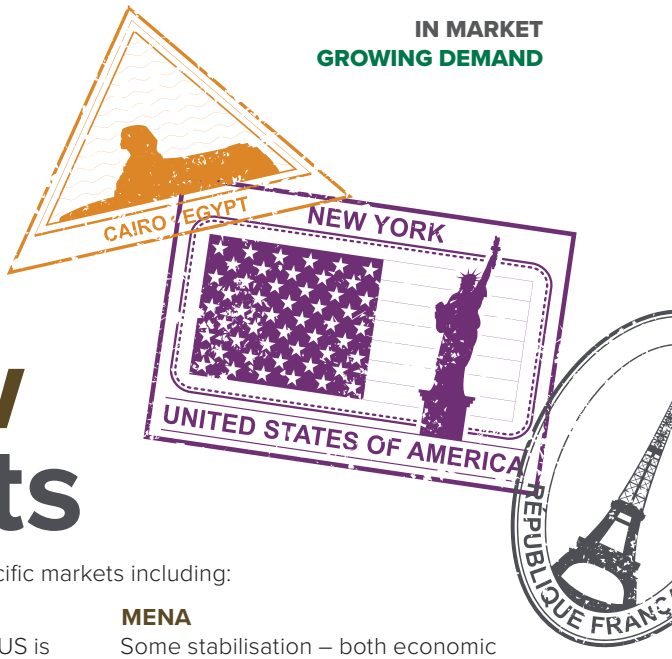
Matthew, who is a cattle buyer for Teys Australia, works with Teys to source the humps.

"At the moment, it's a low-value cut of meat – it's 70CL trim, the hardest thing to sell from a processor perspective. If we could just bring it up to the value of brisket, it would triple the value of the product," Matthew said.

"By having this uniquely Brahman product accepted by the masses, we are hoping to dispel consumer negativity towards the breed. It is my long-term hope that breed preferences will be removed from consumers' minds, with MSA grading determining eating quality, regardless of breed." ■

Producer Innovation Fast-Track program: mla.com.au/fasttrack

The Smokin' Yak: thesmokinyak.com



The world view for beef exports

Australia is well placed in the global beef market but competition is intensifying, with all major beef exporting countries facing a unique situation with a period of forecast production growth.

That was among the key messages at MLA's Global Markets Forum at Beef Australia 2018, where MLA market specialists from around the world shared insights with 200 producers and industry stakeholders.

MLA General Manager – International Business Michael Finucan cited growing competition from South America, India and the United States as threats. These sit alongside other challenges, he said, including protectionism, particularly in the US, market access and changing consumer demands.

On the upside, Michael said Asia's growing middle class presented great opportunities, with the number of households in the south-east earning more than US$35,000 expected to double in the next four to five years. Households earning over US$35,000 are used as an indicator of those consumers who can afford Australian beef.

Major market research by MLA is underway in South-East Asia covering eight countries and 29 cities, to identify the most attractive future growth cities, the profile of these cities, who our future Australian beef customer is and what they want.

The forum heard details on specific markets including:

Japan and Korea

With increased production, the US is aggressively targeting our traditional strongholds of Korea and Japan. Japan is the biggest beef market for both Australia and the US.

In both Japan and Korea, country of origin is the number one decision driver for consumers when buying beef. However, Australian beef remains a clear favourite among consumers, and is ranked higher than the US in terms of preferred country of origin, guaranteed safe to eat and consistent quality standards.

China

The Chinese economy remains strong with growth ambitions as it shifts to a consumption-driven economy and discretionary spending rising fast. Regardless of wealth, purchase behaviour is still driven by price, familiarity and availability. In terms of imported protein, beef is China's number one, and beef import demand in China is forecast to grow from just under two million tonnes carcase weight equivalent (cwe) in 2016 to more than 2.5 million tonnes cwe by 2027.

European Union and the United Kingdom

In the EU, negotiations on an Australia-EU FTA will start in the next couple of months, providing a once-in-a-generation opportunity for Australia to improve market access. The EU offers huge potential – Australia's current export quota is 7,150 tonnes in a market that consumes eight million tonnes of beef. Households earning a disposable income above US$35,000 are expected grow by 7% to more than 105 million households by 2021.

With the Brexit process underway, Australia will start negotiating a trade deal with the UK from April 2019.

MENA

Some stabilisation – both economic and political – is occurring in parts of the Middle East and North Africa (MENA) region, providing a greater opportunity to build the premium end of the market. With stabilisation comes growth in tourism, and tourism numbers are forecast to grow across many cities. In Dubai alone, visitor numbers will grow from 16.8 million in 2018 to 20.6 million in 2022. Urbanisation in most countries means that modern retail is on the increase and consumers are more prepared to purchase from organised retail channels.

North America

In North America, where foodservice is a key target for MLA in promoting Australian beef, retail opportunities are growing. Chilled grassfed exports have increased in the last decade and now account for 25% of total beef exports to the region. Millennials and urban eclectics is a target market in North America – they're wealthy, healthy and digital-savvy, and most likely to be 25 to 49-year-old women. Awareness of 'country of origin' remains a challenge – origin is not considered as important by consumers compared to themes such as freshness, safety, value and nutrition. ■

beefaustralia2018.mla.com.au

MARKET FOCUS

Building foundations in

China is Australia's number one trading partner. However, Australia is China's number 14 trading partner.

According to MLA's Greater China Country Manager Joe Zhu, the message for Australia's red meat industry from these two key figures is that there is plenty of room to grow.

"While we have traded red meat into China for decades, the market really only opened up in 2012–13. If you consider this, it means our relationship is still in its infancy," he said.

"Australia is also ranked fourth, which is high, for trade deficits, and China is more likely to have smooth relations with countries which have a trade balance. This also puts pressure on our markets."

In 2017, China still met 78% of its beef consumption needs with domestic production. Another 8.7% was met by direct imports and, of that, 1.5% was Australian beef (valued at $781 million), making China Australia's fourth largest beef customer.

MLA has invested significantly in the last three years in getting to know and understand the Chinese market better. The China Attractive Cities Study focused on rapidly growing areas of population to identify 15 cities (from 335) which offered the greatest opportunities for Australian exporters.

MLA's Global Consumer Tracker surveys and market snapshots keep the data up to date and support the development of market strategies.

The key market drivers for imported Australian beef have been identified as:

- **Economic.** Income growth, particularly growth in the number of households earning over $35,000/year, is driving increased expenditure and the ability for consumers to choose where they spend their money. This is challenged by infrastructure shortfalls which affect logistics and distribution.
- **Social.** The country is moving towards a consumption-driven economy supported by increased incomes and the rural-urban shift. With this shift, the importance of brands and how they are positioned to meet the consumer's desire for luxury or premium goods increases.
- **Political.** The political landscape and relationships between Australia and China can affect trade flows between the two countries.

When it comes to red meat purchasing decisions, Joe said MLA has identified three factors.

- **Perceptions.** While price, familiarity and availability still influence purchasing decisions, 'premiumness', food safety, freshness, health attributes and environmental factors are becoming more important.
- **Preferred proteins.** Pork is still king, followed by chicken, with beef and lamb a distant third and fourth. Pork is readily available, affordable and a core ingredient of traditional dishes.
- **Buying habits.** Generally, Australian beef is purchased by consumers who shop in western retail stores and have high incomes.

Joe said, first and foremost, MLA's market strategy for China is to build a strong foundation based on improving market access and building supply chain relationships.

"This will not be an overnight success. It will involve years of education, negotiation and supporting the supply chain in improving access," he said.

"It's about setting the course for future success."

Australian beef and lamb is being positioned to take advantage of the evolution of the marketplace, such as sourcing supply for new e-commerce platforms and developing new products which overcome barriers of 'difficult to cook'. ■

Joe Zhu
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MEAT SALES JUST A CLICK

Surveys of consumers of imported meat in China show products are purchased predominantly from hypermarkets and specialist butcher shops, but the popularity of online retail is quickly rising.

MLA's most recent consumer survey in China found 30% of consumers of imported meat made purchases in the past month from an online platform.

With consumers also signalling they are often confused about country of origin on imported products, MLA is using the True Aussie branding in partnerships directly with online retailers.

True Aussie branding is now featured on 160 Australian products, including beef and lamb, available through the Alibaba Group's Tmall Fresh online food selling platform.

"Appetite for Australian fresh food in China continues to experience significant growth and e-commerce channels provide a unique opportunity for exporters to connect with hundreds of millions of Chinese consumers," said Maggie Zhou, Managing Director of Alibaba Group (Australia and New Zealand).

Three years down the track, the True Aussie branding has been rolled out widely

China

AWAY

in China and is now seen in supermarkets and butcher shops in Beijing, Shanghai, Hangzhou, Chengdu, Shenzhen and Guangzhou.

A new program with high-end supermarket City Super has seen Australian beef and lamb secure premium shelf space in the chain's four Shanghai outlets. With a retail counter concept based on a cross between a western butchery and delicate Japanese-style meat cut presentation, the offering is mainly Wagyu, hormonal growth promotant-free grassfed beef and long grainfed Angus beef. ■

CHINA

China's population:

- 1.41 billion

By 2021 that is expected to be 1.43 billion, and 19.7 million households will earn more than US$35,000/year (double today's figure)

Australian beef exports to China:

- volume – 110,059 tonnes shipped weight
- value – $781 million
- 90% frozen, 10% chilled

Australian sheepmeat exports to China:

- volume – 83,195 tonnes shipped weight
- value – $382 million

Annual meat consumption:

- 56.8kg/capita, of which 55kg is pork

Five top cities identified as growth markets for Australian red meat:

- Beijing
- Shanghai
- Hangzhou
- Shenzhen
- Chengdu

(from the shortlist of 15, established by an MLA-funded study looking at a range of factors including westernisation, population, infrastructure and income).

Want to know more? Check out mla.com.au/market-snapshots for a more in-depth look at key markets.

INDUSTRY INSIDER

A solution **seeker**

Dr Johann Schröder talking with producers at Beef Australia 2018.

In his long career in animal health, Dr Johann Schröder has learnt patience is more than a virtue – it's the key to job satisfaction.

"Although it's always exciting to discuss a new idea and a new research project, the reality is that it mostly takes years for research outputs to see the light of day," said Johann, who for the past nine years has managed MLA's animal health research and development investment portfolio.

"Some projects take years to complete and, now and then, circumstances force one to stop and restart. If the research is aimed at gathering the efficacy, safety and toxicity data for a new chemical or vaccine, this is followed by the actual registration process. From conception to product launch typically takes from seven to 10 years for a livestock product.

"The Nobel Prize in Medicine for the discovery of ivermectin was awarded in 2015 – 40 years after the discovery."

Dr Johann Schröder
E: jschroder@mla.com.au

Here Johann talks to *Feedback* about his role with MLA.

Q:

Explain your role with MLA and how you came to a career in the red meat industry?

While I grew up in an urban environment in South Africa, some of my earliest memories include exposure to wildlife with my grandfather and watching my dairy farmer uncle help calving cows. In my time as a private veterinarian, working with cattle gave me the most satisfaction.

Subsequently, working in the pharmaceutical industry for more than 30 years, most of that effort was directed at finding better ways to manage parasites in and on livestock.

Like many South Africans, I felt an affinity with Australia when I visited while working in the animal pharmaceutical industry.

After four years working in Germany I settled here and, having worked as a vet and having obtained two Masters degrees, the research and development sector was a natural fit. I found myself a job with Australian Wool Innovation in 2006. I became an Australian citizen in 2008.

Working in the research and development (R&D) environment has allowed me to use my experience while addressing the next steep learning curve.

Q:

What are the best parts of your job?

Seeing a producer's eyes light up when we can provide them with an answer to a problem. Remarkably often, that solution is to be found in the treasure trove of completed MLA-funded project reports.

Also, the amazing intellectual wealth of the people I work with, without whom little of what I do would amount to anything. I have changed jobs more than once in order to work with someone I respected or admired.

The technical content of the work, which is varied (it covers the breadth of the veterinary curriculum), challenging (we'll never live in a disease-free world) and stimulating (defining the researchable question, helping with the experimental design).

I take pride in the extent to which MLA's R&D investments have helped to reduce knowledge deficits and provided the means for better livestock wellbeing management.

Q:

How do you like to eat your red meat?

Depends on the cut. Brisket, oxtail, lamb shanks and neck: slow-cooked, till it nearly falls off the bone.

Beef: rare, seared on the outside and then finished at low heat.

Lamb: shoulder and leg pink, but not quite as rare as a steak.

My grandfather could crack long bones with a sharp blow from the back of the carving knife, so that we kids could dig out the marrow – yummy. ■

Baby, it's cold outside

Turn up the heat with this new version of a classic, one of a selection of winter warmers created for 'Australian Beef: the Greatest' recipe booklets available through butchers and meat retailers.

Asian osso buco

SERVES: 4

4 large pieces beef osso buco (300g–350g each)

¼ cup plain flour, seasoned

1 tbsp vegetable oil

4cm piece fresh ginger, peeled and thinly sliced

6 star anise

2/3 cup teriyaki marinade

1 tsp Sichuan peppercorns, lightly crushed

1 long red chilli, deseeded, finely chopped

450g cooked brown rice, to serve

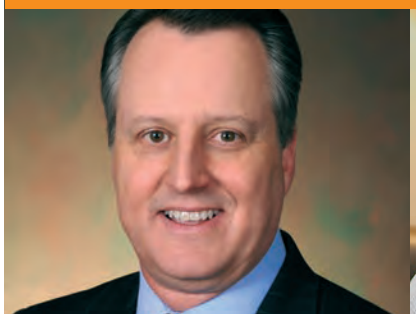
Asian greens, to serve

1. Preheat oven to 130°C. Pat osso buco dry with paper towel. Place flour in a large snap-lock bag, add beef and toss to coat. Heat oil in a large casserole dish over medium-high heat. Cook meat for 2–3 minutes each side or until browned all over.
2. Add ginger, star anise, teriyaki marinade, peppercorns, chilli and enough water to just cover the meat. Season with pepper, cover and cook in oven for 2–2¼ hours or until meat is tender and just coming off the bone. Remove meat from sauce and set aside on a plate loosely covered with foil. Place sauce over medium-low heat and simmer for 10 minutes or until it thickens slightly.
3. Prepare rice according to packet instructions.
4. Serve osso buco with sauce, rice, steamed greens and extra chilli, if desired.

AUGUST 5-7 PERTH, WA

– For all breeds and all businesses –

KEYNOTE SPEAKERS



Charlie Arnot, US
Consumer trust: **Food systems expert draws on his experiences in building consumer trust**

Melissa Clark-Reynolds, NZ
Disruptive change: **A unique perspective to global disruptive change with an agricultural twist**

James Rebanks, UK
The Shepherd: **How a Lake District farmer gained a flock of followers on Twitter**

A fantastic line-up of speakers from across the globe will provide a thought-provoking and insightful look at the sheep and lamb industry in Australia and internationally.

Plus:

- Fletcher International Welcome Function
- Extensive trade exhibition with more than 80 exhibitors
- Virbac International pre-dinner drinks
- AWI GrandsLamb formal dinner
- Breakfast with AusWest Seeds, Sheep CRC & Gallagher
- Networking opportunities with producers and industry leaders from across Australia and globally
- Optional post conference tours

Register at www.lambex.com.au

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