

# Feedback

## Cashing in

20// **Bernard Anderson**  
shares his learnings  
from **CashCow**

06// **To market, to market**

Beef export trends over 30 years

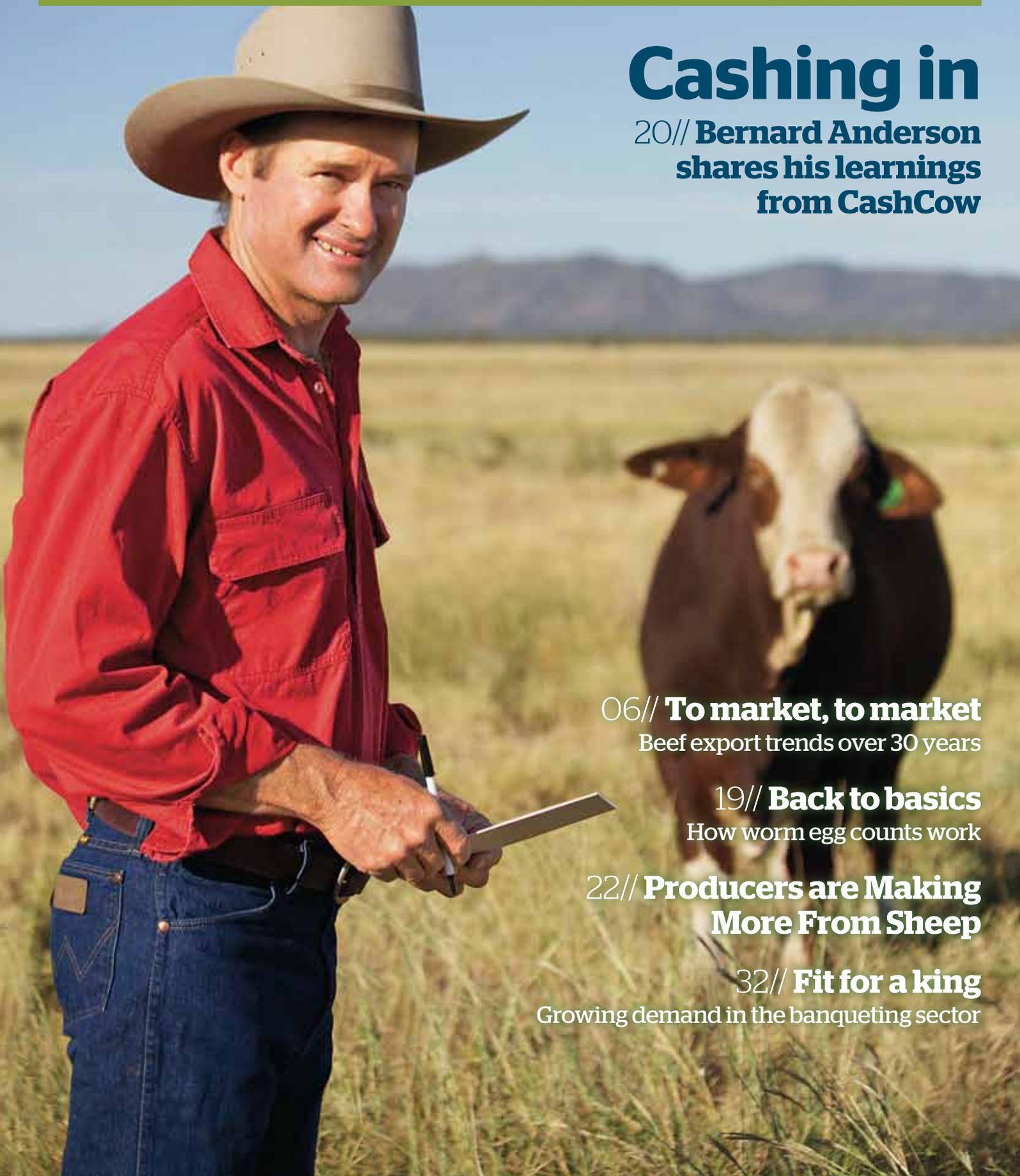
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How worm egg counts work

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Growing demand in the banqueting sector



## A note from the MD...



**M**ay has been another action-packed month with Beef Australia 2015 and the launch of MLA's Southern Producer Forums. I've enjoyed getting out, meeting with levy payers and listening to their issues and concerns. I've valued the frank, open conversations and I look forward to this continuing.

These events have been an opportunity for me to talk about MLA's role as a provider of R&D and marketing services to beef, sheepmeat and goatmeat producers. I've also shared MLA's sharpened focus on ensuring all our activities have the end goal in mind of contributing to a profitable and sustainable industry.

May also saw the launch of Livestock Data Link (LDL), an online carcass feedback system for beef and lamb producers to help improve market compliance. Failure to meet market compliance costs the beef industry more than \$100 million annually. LDL has been three years in the making, developed by MLA and industry partners.

It's very encouraging to see that Australia's largest processor, JBS, is adopting LDL and releasing it to its producers through its Farm-Assured programs, covering more than 2,000 beef and lamb producers.

On the marketing front, our lamb and beef campaigns have been recently recognised by the advertising industry by being finalists in the prestigious Mumbrella 'TV ad of the year' award. This is the first time in the history of the awards that one industry or market sector has had two ads in the top six finalists. Good luck to the team behind the ads and hopefully our beef and lamb industries have notched up a win between them.

Feel free to contact me any time to talk about these and other areas of MLA's investment:

[managingdirector@mla.com.au](mailto:managingdirector@mla.com.au)

**Richard Norton**  
MLA Managing Director

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# Watch all the action

Beef Australia 2015

Didn't make it to Beef Australia 2015? Or would you like to re-visit some of things you saw and heard during the week? Well, there are plenty of ways to re-live the event. Here's a selection:

## MLA Producer Forum

Presentations from the MLA Producer Forum are available to read and watch online at [www.mla.com.au/beef2015forum](http://www.mla.com.au/beef2015forum) including:

- Dr Phil Holmes of Holmes & Co talking about the Northern Beef Situation Analysis insights and recommendations
- Industry consultant Geoff Niethé on improving reproduction - the findings and recommendations from the latest R&D
- Producer Michael Lyons and his presentation of the Wambiana Station story in which he explains changes the enterprise has made to improve reproductive performance
- MLA's Dr Alex Ball's overview of the content of the Australian Beef Language Review White Paper.
- MLA Project Manager for Eating Quality Data Analytics Jessira Perovic explaining how to use the MSA Index in northern production systems
- Producer Debbie McBryde on how 'Oombabeer Station' consistently achieves MSA in its Brahman herd by employing good animal welfare practices and holistic management
- MLA Marketing Manager Consumer Programs Andrew Howie explaining growing consumer loyalty in the domestic beef market
- MLA Community Engagement Manager Pip Band answering the question "does the community have a beef with beef?"

## Beef Beyond 2015 - Meeting consumers and our own expectations

Watch a video of the seminar which looked at how the cattle industry can achieve a balance in innovation in primary production and the demands of the modern Australian and international consumer.

Leading international environmental and consumer affairs speaker **Bruce Vincent** shares parallels from the timber industry in Montana, US. The talk is followed by a panel discussion from Australian beef industry leaders and service providers, including MLA. Go to: [www.youtube.com/watch?v=suiuVN2oL3A](http://www.youtube.com/watch?v=suiuVN2oL3A)

## Social media

Watch the action through posts, tweets and videos on MLA's Facebook and Twitter accounts:

[www.facebook.com/meatandlivestockaustralia](http://www.facebook.com/meatandlivestockaustralia) or  
<https://twitter.com/#!/meatlivestock>

# 90,000

people attended Beef 2015 (5,000 more than 2012)

## A week of engaging...



MLA Managing Director Richard Norton and staff interacting with attendees at Beef Australia 2015, Rockhampton.

## Learning...



Attendees in the MLA Innovation Marquee.

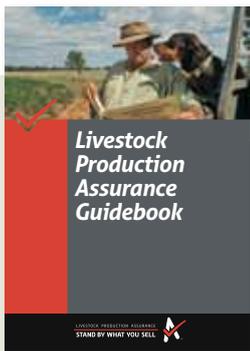
## And enjoying...



Chef Alastair McLeod cooking up a storm.



Read what some producers took away from Beef Australia 2015 on pages 38-39 of this edition of *Feedback*.



## The latest on LPA

**P**roducers can access the newly updated Livestock Production Assurance (LPA) Guidebook on the MLA website.

LPA is the Australian livestock industry's on-farm food safety program. Introduced in 2004, it meets the stringent requirements of our export markets, providing an assurance of the safety of the red meat grown on Australian farms.

"I'd encourage producers to read the detail of the guidebook, which outlines the key requirements of the LPA program," said chairman of the LPA Advisory Committee Kevin Roberts.

"It also serves as a practical guide to implement and demonstrate compliance with the LPA rules and standards."

The majority of meat processors require livestock to be sourced from LPA-accredited properties and more than 210,000 Property Identification Codes are currently LPA-accredited.

The 28 page guidebook outlines everything a producer needs to do on-farm to meet LPA guidelines.



Download the new guidebook by clicking on the *Livestock Production Assurance Guidebook* in the 'Additional information' section at: [www.mla.com.au/lpa](http://www.mla.com.au/lpa)

## Telling Aussie beef's safety story

### Two southern NSW beef-producing families are helping sell Aussie beef in Japan.

The Hicks family of Holbrook, and Lucinda Corrigan (an MLA board director) and her family, who run Rennylea Angus at Bowna near Albury NSW, are featured in new videos and marketing materials produced by McDonald's Japan to tell the story of Australia's clean green beef production.

McDonald's Japan, one of Australian beef's largest global customers, filmed interactive videos at farms and processing plants to answer the concerns of their customers, help build their brand reputation and demonstrate a two-way, transparent conversation.

The on-farm video focuses on the grassfed pastures that the Corrigan's cattle are raised on, as well as demonstrating the benefits of full traceability from birth to slaughter through the National Livestock Identification System.

### Restoring reputation

McDonald's brand image suffered in mid-2014, when media reported food safety issues at a Shanghai chicken supplier, leading to disruptive coverage, which affected the fast food outlet's reputation and consumer foot traffic.

"The first and upmost priority for McDonald's was to regain consumer confidence in our food quality, and beef is of course one of most crucial ingredients for our business," said Miwa Yamamoto from McDonald's Japan.

In response to the coverage, McDonald's Japan implemented a communication program to promote supply chain transparency and the value of its food quality in its 3,000 stores.

"We developed highly engaging messages to consumers around our food quality, thanks to strong support and commitment from Australian cattle producers, beef processors and MLA," Miwa said.

McDonald's beef, and particularly its Australian beef supply chain, formed an integral part of the program in raising awareness of its food safety and quality with Japanese consumers.

### Pursuing partnerships

MLA partnered with McDonald's on the program, providing logistic and coordination support in Australia as well as materials in the form of new educational DVDs for employees, video diaries targeted towards consumers from Australian cattle producers and meat processors and media opportunities along the McDonald's supply chain.

McDonald's also received support from Teys Australia, who is a beef major supplier to the company.



View the videos at: [www.mcdonalds.co.jp/safety/food-safety/factory/beef.html](http://www.mcdonalds.co.jp/safety/food-safety/factory/beef.html)

## Target 100 celebrates

**S**ince Target 100's launch three years ago, the program has made great inroads to ensure the Australian community continues to better understand and trust the cattle and sheep industry.

"This is reflected in the fact that the percentage of people reducing beef and lamb consumption for perceived environmental or welfare reasons hasn't crept up from 5% in this time, despite significantly more noise around the issues," said MLA's Community Engagement Manager Pip Band.

Highlights of the past three years include:

- 230 producer case studies on the Target 100 website
- 22,000 views in one week on YouTube of the #Goodmeat series of videos featuring wild man and adventurer Andrew Ucles



- 20,000 urban consumers have been reached at events where producers get a chance to talk to crowds about producing beef and lamb sustainably
- 10,000 Facebook followers
- Two million people saw the Target 100 ad in cinemas, on Qantas flights and many others saw print ads in metro newspapers.
- Five primary and five secondary school study guides created
- More than 90 of the Target 100 R&D initiatives have been completed.



[www.target100.com.au](http://www.target100.com.au)

To upload your story, visit: [www.target100.com.au](http://www.target100.com.au)

# Footprint reduction

**Greenhouse gas (GHG) emissions intensity from the Australian beef industry has fallen by 14% in the 30 years from 1981 to 2010, a landmark study has revealed.**

**T**he Life Cycle Assessment, which was funded by MLA, quantifies the environmental impacts of Australian beef production and found that steps undertaken by cattle producers have led to significant reductions in emissions and water use over that period.

It found improved genetic selection of animals, heavier finishing weights, increased survival rates, capping of artesian bores and a decline in irrigation, as well as an increase in lot feeding since the early 1990s, had helped reduce environmental impact and improve productivity.

Lead author of the paper Steve Wiedemann, of FSA Consulting, said the landmark study provided a more accurate picture of the Australian beef industry's environmental footprint.

"In the past, work has been undertaken to look at trends with emissions, water and land use, but this is the most comprehensive study undertaken to date using a life cycle assessment approach - a widely accepted methodology which is used internationally for measuring the environmental performance of products such as beef," Steve said.

"This shows that changes to farming practices actively pursued by the industry, such as a focus on productivity and herd management, have resulted in dual benefits by reducing environmental impacts/kg of product, at the same time as improving productivity."

Lachlan Hughes, a fifth generation Queensland beef producer from Dulacca, Queensland, and member of the Cattle Council of Australia, said the study provided tangible data that demonstrated significant productivity and environmental gains.

"I believe the Australian beef industry is committed to enabling transparency across the supply chain and this study demonstrates that all the hard work is paying off," he said.

"We have quantified performance across water, GHG emissions, energy and land use and now we also want to look at how we quantify other environmental impacts, like soil health and biodiversity. We remain committed to sustainably managing our land and reducing resource use wherever possible into the future."

## Key study findings were:



### **GHG: 14% reduction** in emissions intensity.

In the three decades since 1981 there has been a decrease in GHG intensity (excluding land use change emissions) of 14%, from 15.3 to 13.1kg CO<sub>2</sub>-e/kg liveweight (LW).



### **WATER: 65% reduction** in consumptive water use for beef production.

This has dropped to almost a third in the three decades from 1981, from 1,465L/kg LW to 515L/kg LW. Total consumptive water use was dominated by drinking water requirements, water supply losses and irrigation water use.



**ENERGY:** Energy demand **increased almost two-fold** over the analysis period from 6.3-11 MJ/kg LW, as a result of intensification in the supply chain. This was a clear example of trade-offs between impacts and resource use; improved productivity was partly achieved via greater inputs of energy resources to produce grain and provide higher digestibility diets.



**LAND USE:** This indicated a **decline of around 19%** in land occupation for grazing/unit of production in the analysis period. This intensification of land use (i.e. an increase in the production/ha of land occupation) reflected both the increase in herd efficiency and a decrease in total land use for grazing.



**LAND USE CHANGE:** GHG emissions estimated to have **reduced by approximately 42%**, mainly due to vegetation protection and tree planting (although there is a lower degree of certainty with the data available for land use change). The decline largely reflected the ban on broadscale clearing in Queensland.



The study has been published as a peer reviewed paper in the journal *Agricultural Systems*:  
[www.sciencedirect.com/science/article/pii/S0308521X14001565](http://www.sciencedirect.com/science/article/pii/S0308521X14001565)

Further details on the study, along with infographics that outline the study findings, are on the Target 100 website:  
[www.target100.com.au](http://www.target100.com.au)



# The beef export evolution

**Australia's beef export industry is riding the "tidal wave" that has been called the 'developing Asia era'. It's the third distinct era in the modern history of beef exports. But how did Australia position itself to catch that wave in the first place and how do we prepare for the next one?**

**L**ong-time export industry analyst, consultant and former MLA chief economist Peter Weeks considers the more recent history of Australian chilled and frozen beef exports to be defined by three eras.

The 'US era' saw the take-off of beef exports in the 1970s and '80s. From 1990 to 2010 it was the 'North Asia era', and we are now in the midst of the 'developing Asia era'.

"The beef industry has come a long way since its early days, driven principally by consumer demand growth in Asia but assisted by trade liberalisation and greater sophistication and integrity throughout the Australian beef supply chain - especially on farm, in processing and in company and industry marketing," he said.

While the US and Japan remain large and important markets, Australian exports now cover a full array of beef cuts to more than 100 markets - dominated by those in Asia.

## The 'US era'

In the 1970s and '80s - the 'US era' - beef exports were relatively simplistic. The majority was manufacturing grade beef for the US fast food sector, which sat neatly with the high quality Australian retail and foodservice markets. Only small amounts of beef went to markets like Japan and Korea, which were governed by small quotas.

## The 'North Asia era'

It all changed quickly in the 'North Asia era' when Japan and Korean markets were transformed by trade negotiations and liberalisation.

"By 2000, Japan and Korea accounted for almost 50% of the value of beef exports and the US only 34%. This peaked after US beef

was banned in late 2003 during the BSE crisis, reaching 59% of beef export volume in 2006 and 64% of value in 2005," Peter said.

It also had an impact on farm with producers having to shift to fully grown steers and heifers, off both grass and grain, and to hit target weights faster to lift eating quality. Along came the lot feeding sector to help meet these demands.

"These changes also meant the market became more sophisticated and along with that came major challenges," said Peter, explaining this meant improved marketing campaigns, grading and quality assurance systems, relationship building, the switch to chilled beef, finding destinations for the non-preferred cuts and overcoming trade disruptions.

This helped set up Australian beef exports to ride the next wave - direct from China and Indonesia - and survive the re-entry of US beef into the Japanese and Korean markets in 2007.

## The 'developing Asia era'

This arrived more in the form of a tidal wave. Australian beef exports to China and Indonesia rose from 53,000 tonnes swt in 2006 to 297,000 tonnes swt in 2013, or from 6% of total exports to 27%.

"It was principally the strength of underlying beef demand growth in these massive population centres, together with the easing of import access restrictions that drove this expansion," Peter said.

"Australia is currently one of the few countries with official access to China and Indonesia and also has the added advantages of a strong image for clean and safe meat, a falling currency relative to these countries, the widest range of beef

product on offer and well-resourced industry research, integrity and marketing programs to back it up."

## The next wave

So what are some of the factors which may play out during this ongoing evolution of the Australian beef export industry?

Peter suggested the market features would include:

- a shift in beef trade flows from well developed North American and North Asian markets to China, South-East Asia and, perhaps, the Middle East
- increasingly positioned with brands in the quality mid-to-upper levels of modern retail and foodservice in these emerging markets
- shift in the composition of Australia's beef trade towards quality lean beef - company branded, well specified, natural, with quality, safety and integrity assured
- focus on customers requiring reliability, safety, integrity, traceability and tight specifications (even for manufacturing beef)
- a growing short grain-finished beef export component, as a means of efficiently finishing pasture-grown cattle to specifications
- Domestic consumption will fall but consumers will be prepared to pay a high price and demand will focus on premium cuts, such as loins.

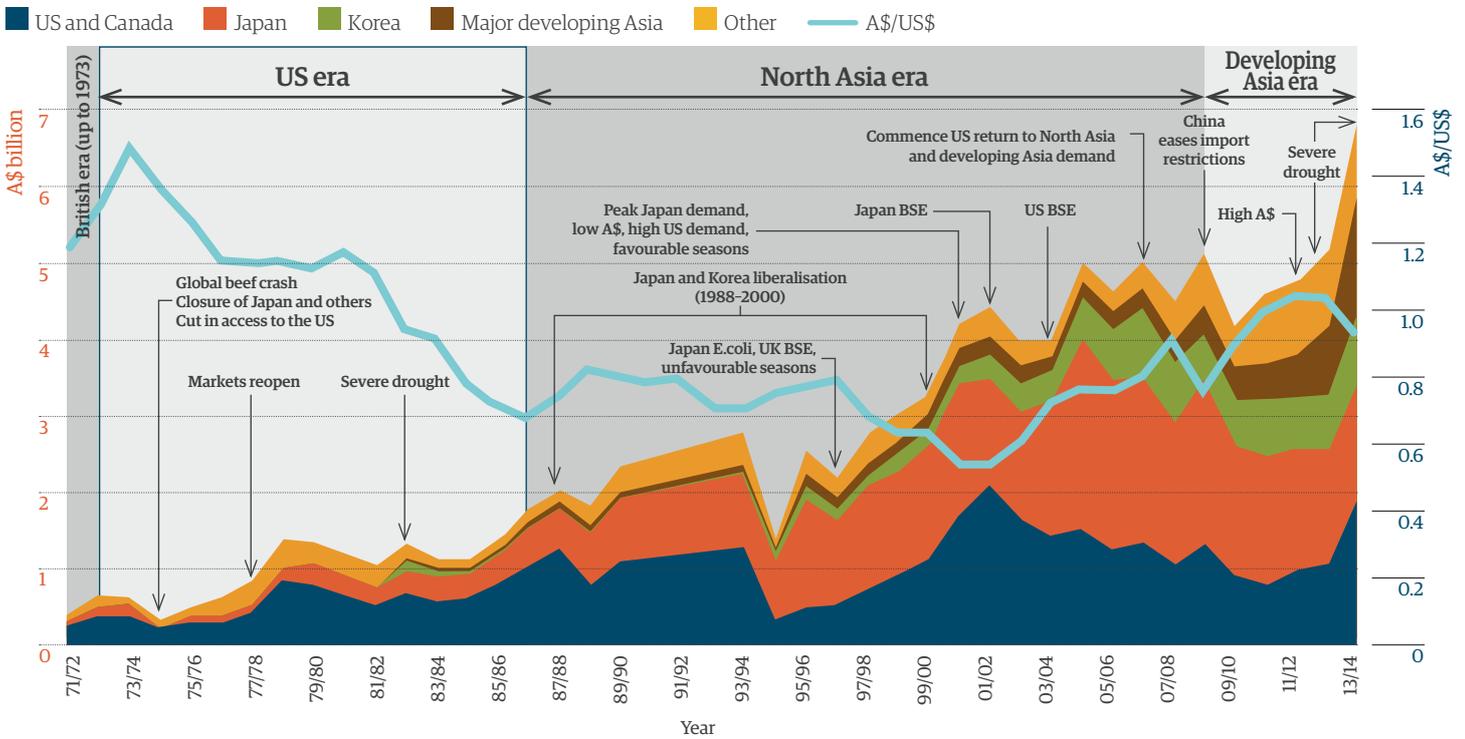
**Read the reflections of one exporter about these eras on page 8 →**



**Peter Weeks**

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**Figure 1 Australian beef export values, Australian-US exchange rate and significant market developments**



Source: Australian Bureau of Statistics and MLA

# Ready for the next wave

**Michael Finucan**  
MLA General Manager -  
International Markets



**M**LA's General Manager - International Markets Michael Finucan shares how his team continues to capitalise on the 'developing Asia era', while also preparing for 'the next wave':

## 1. Opening doors

While Australia has favourable market access to many markets, there are still many trade barriers and obstacles.

MLA works closely with government and industry to address these through:

- Advocating for free trade agreements - now that the big three are completed (Japan, Korea and China) we are working on the next wave - Trans-Pacific Partnership, Taiwan, Indonesia, EU and India (sheepmeat mainly).
- Reducing technical barriers and promoting our superior systems - such as improving chilled access to China and improved shelf life to the Middle East.

## 2. New channels

MLA assists industry maximise opportunities in developing markets and new product segments to grow demand for Australian beef. This is done through:

- Attending trade shows and conducting educational forums and seminars, importers and end users have built up a detailed understanding of our superior systems and quality and the range of products on offer. We have seen this coming to fruition in China, with significant expansion of Australian beef and lamb in the retail sector.
- Identifying new market segments and assisting trade to supply these markets. MLA works closely with local industry to match Australian beef and sheepmeat cuts to local dishes. We also find solutions for meeting local consumer price points through education about secondary cuts and butchery techniques.

## 3. Brand power

MLA continues to roll out the new 'True Aussie' brand to global markets. The brand communicates the positive attributes of Australian beef to the consumer by promoting:

- the pristine environment of Australia
- the quality and integrity of Australian producers, and their standards and professionalism
- the healthy, relaxed and shared enjoyment it offers.

*Feedback* will feature how the roll out of 'True Aussie' has been received by international markets in an upcoming edition.

**Michael Finucan, MLA**  
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In profile **Exporter**

## Richard Rains // Beef exporter



**R**ichard Rains' career spanned the 'three eras' of Australian beef exports. After growing up on a farm in central west NSW, he completed a cadetship with Dalgety after school and ended up in their export division. In 1976 he moved to meat exporter Sanger and became majority shareholder in 2000.

Since selling his equity in Sanger in 2013 – by then one of the biggest privately owned meat exporters in the world – Richard remains involved in the industry as a board director of Certified Australian Angus Beef (CAAB), The Arcadian Organic and Natural Beef Co, and Paraway Pastoral Co.

**How has the export industry changed in the past 30 years?** The biggest changes have been to technology and processes. Before containerised shipping we had to send product as 'break bulk', which involved freezing the entire ship's hold. The Koreans sprayed boiling water on the beef to thaw it. Techniques are more sophisticated today. Market forces are also different. In the early days, Asian markets weren't fully developed so stocks fluctuated but this changed as the market developed and trade to Korea and Japan liberalised.

**You were on the ground with Dalgety during a milestone for Australian beef exports with entry into Korea in 1976.**

**How did that unfold?** I had a feeling in my bones that Korea could be the next big

customer of Australian beef. Korea was following the same path as Japan – they had domestic premium beef (from Hanwoo cattle, similar to Wagyu in Japan) but demand outstripped supply. When the Korean Government opened the first tender for 500 tonnes of frozen, bone-in forequarter beef, Dalgety supplied the contract. It was risky as the payment terms were 90% on shipment and 10% after arrival and inspection in Korea. Many exporters weren't prepared to take that risk as typical payment to suppliers was 100% up front.

**What event stands out to you, to demonstrate market opportunities?**

McDonald's decision to use non-US beef was significant, as they are the largest customer for protein in the world. Sanger negotiated with McDonald's for 15 years before they took a trial shipment of Australian beef in 2000. (Sanger went on to supply beef to McDonald's in the US, Japan, Korea, Taiwan, China and much of South East Asia, as well as domestically.)

**How do you identify a new market?** When you live and breathe the export industry, you just develop a nose for opportunities. It's about being observant and listening to your hunches. I was travelling to the US several times a year and saw that while other burger chains were using Australian beef, McDonald's wasn't. We had to convince them that our frozen beef

provided a hedging strategy when combined with chilled domestic product.

**And how you capitalise on an opportunity?** Timing is crucial. For example, I think the time is finally right for the new abattoir being developed in the Northern Territory. Historically, transport and export infrastructure were insufficient to support a northern processing sector but we now have wet season roads, containerised shipment, vacuum packaging technology, 457 visas and more markets for beef produced in the north. I think it's a real opportunity for Australia's beef export industry.

**How do consumers influence market share?** Although we send premium chilled cuts to Japan it is also a growing market for grinding beef. This reflects increasing tastes for western dishes such as hamburgers.

Food safety concerns are also influential but with different outcomes. For example, avian flu pushed consumers away from chicken to alternative proteins but after the BSE outbreak in the UK, many people avoided beef regardless of origin.

**How should the beef export industry respond?** The most important thing the Australian beef industry can do is to protect our clean bill of health. The National Livestock Identification System and Australia's biosecurity measures are important. Marketing also plays a role in maintaining and growing markets. Campaigns around provenance and the integrity of Australian beef are important in markets such as Japan, Korea and now China where food safety is a paramount concern for consumers.

**What factors underpin the viability of Australian beef exports?** We must increase processing efficiency to compete with countries that have cheaper labour. We need more automation in abattoirs. The MSA grading scheme also remains imperative. The opportunity lies in branding. Just as Penfolds wine encompasses many labels and price points, the label of 'Australian beef' should encompass many brands, all backed by MSA so customers know what quality they are buying.



**Richard Rains**  
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Building capability



The Australian ICMJ team training for beef quality and yield grading.

In profile Building capability



# Breeding leaders

The impact of the Australian Intercollegiate Meat Judging (ICMJ) competition can now be seen in boardrooms throughout the red meat industry.

**T**hroughout its 25-year history the goal of the ICMJ, supported by MLA, has been to encourage tertiary students to consider careers in the meat sector to build industry capability.

According to program coordinator Sarah Strachan, that's exactly what has happened.

"Over the past few years we've seen former ICMJ students and coaches step into significant leadership positions," Sarah said.

"We have a lot of ICMJ alumni in high-profile industry positions. We're seeing them in research, feedlots, processing, marketing and agribusiness.

"For example, AACO's Managing Director Jason Strong and Troy Setter, the CEO of Consolidated

Pastoral Company, were involved in the ICMJ program."

While the majority of ICMJ competitors tend to be agricultural or veterinary science students, Sarah said the contest had attracted students from a range of faculties, including engineering and economics.

"There are so many exciting new developments happening in the meat industry in terms of robotics, nutrition and genetics - we need engineers and scientists to progress that work in the future," she said.



**Sarah Strachan, MLA**  
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[www.icmj.com.au](http://www.icmj.com.au)

## Hannah Marshall // ICMJ 2014 team member

**Tertiary course:** Bachelor of Animal Science, University of Adelaide (completed in 2014).

**Current role:** Livestock Manager at Adelaide Plains Feedlot at Lower Light, South Australia. I was recommended for the job through connections I made via meat judging and university.

**ICMJ individual achievement:** Southwest Intercollegiate contest (Texas) - third pork judging.

**Has participating in the ICMJ had an impact on your career plans?** I grew up in the suburbs and helping out on my future in-laws' alpaca stud made me want to be a vet. In my first year of university I joined the Led Steers Team, which got me interested in beef and, then, in my third year, meat judging was offered as an extra-curricular activity. I got a lot out of the ICMJ program and the Careers Expo in particular allowed me to meet and talk with people from the feedlot industry.

It pointed me in the direction of feedlots as a career.

**How does meat judging fit into your current career?**

A lot of producers don't know what happens after they send their animals to the abattoir, so it's great to have had that first-hand experience.

**What was the best thing about the ICMJ trip to the US?**

Going into the abattoirs and being able to see the differences between carcasses here and over there. Also, the people were really nice and so willing to teach us everything they knew. I'm so thankful for the experience.

**How will you use what you have learnt?**

I can now apply things I saw in the US in my job. I can say: "I saw this practice overseas - is this something we could consider doing here?"

"It means I'm a bit more useful!"



**Hannah Marshall**  
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## Climate variability

## What is the Managing Climate Variability Climate Champion program?

**The Managing Climate Variability (MCV) Climate Champion program aims to help producers manage climate risk by:**

- giving producers the best climate tools, products, practices and seasonal outlooks, and an understanding of how to use them in their farm business
- giving climate researchers a chance to interact with producers and get feedback about what regions and industries need from research.

Twenty producers from around Australia, representing most major agricultural commodities, currently take part in the program.

MLA is one of the contributors to the Managing Climate Variability R&D program, which is currently funding research into forecasting and risk management tools and improved producer education on climate variability.



[www.managingclimate.gov.au](http://www.managingclimate.gov.au)

# Flexibility in an era of variability

MLA's newest Climate Champion Joe Keynes has decided managing climate variability comes down to accepting what is within your control and admitting what isn't. Top of the "can't" list is the amount of rainfall. Adapting to change, Joe said, is one thing he "can" do.

**A** fifth-generation producer, Joe has taken on the Climate Champion role to add to his tool kit for managing climate variability. Here, he shares with *Feedback* the changes his business, which is run by him and wife Sally, his brother Graham and sister-in-law Melanie, have made to build climatic resilience.



Follow Joe's progress:  
[www.climatekelpie.com.au/farmer-case-studies/joe-keynes](http://www.climatekelpie.com.au/farmer-case-studies/joe-keynes)

## The climate 'change'

**Joe Keynes summarised his climate challenges as:**

"I don't think there is any typical year. It's always been variable. But I think it's becoming more variable.

We're in a Mediterranean climate, with about 500mm rainfall a year in the west, down to about 400-450 mm on the eastern edge of the property. We get mild wet springs, hot dry summers followed by a milder autumn and cold wet winters. That's historically how it's been.

We're having drier seasons and also extremely wet seasons - we had the wettest season on record only recently. We seem to be getting more summer rainfall, perhaps due to monsoonal influences.

And nowadays the hot days are extreme and we are getting more.

Our winters are also tending to be warmer. We are getting pasture growth happening over winter across the whole property, which I don't think we were getting historically.

We are also getting tighter finishes; so our spring starts closing down much earlier. We are getting more pasture growth during July-August, but once we hit spring, not always, but quite often, we haven't got the deep subsoil moisture reserves so we don't get that growth into the spring like we used to."



**Joe Keynes**

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[www.climatekelpie.com.au](http://www.climatekelpie.com.au)

[www.lifetimeewe.com.au](http://www.lifetimeewe.com.au)

### Snapshot

Joe and Sally Keynes,  
Keyneton, SA.



**Property:**  
6,800ha

**Enterprise:**  
Merino sheep for wool and first-cross lambs, Angus cattle, some cropping

**Livestock:**  
250 Angus breeders and 6,000 Merino ewes

**Pasture:**  
Improved and native grass

**Rainfall:**  
500mm



	Out with the old	In with the new
<b>Seasonal conditions and decision making</b>	When my father started farming, systems were cyclical, but stable. We were doing the 'same old, same old' every year.	It's really up and down and we roll with the punches. We are adapting things as we go, every year. You can't do anything about getting more rain - you can only make sure you optimise the amount of pasture production when moisture is available, and have animals that optimise the use of the pasture that's grown.
<b>Managing the feed bank</b>	Traditionally our pasture would be sub-clover, with a bit of phalaris and cocksfoot thrown in. We'd do that year in, year out.	Now, we seek diversity. Everyone talks about biodiversity in our native bushlands, so maybe we need to have diversity in our pastures. If we get different sorts of events, such as more summer rainfall, we can benefit from that rainfall whenever it falls. In light of increased summer rains, lucerne is a crop we are revisiting and we planted a paddock last year, just to the north of the house, which has a two-fold purpose. It gives us grazing options, but it is also a firebreak. We run mobs of around 1,000 ewes and rotationally graze the whole property with paddocks given six week spells. We intensively rotationally graze our native grass pastures in spring, and then give them a rest over summer, hoping to benefit from summer rain. Then, in autumn, we can put the ewes out there for lambing.
<b>Changing sheep systems</b>	Historically, we were running Merino sheep for wool. Ten years ago we started putting Border Leicesters over our Merinos, for first-cross ewe and wether lamb production. We were lambing in March-April, a time when feed reserves were low. And if you got a late break, you were feeding, feeding, feeding.	We've moved lambing to the middle of May for the cross-bred lambs and June for our Merinos, when we should have high quality green feed available. The young ewes go to three prime-lamb producers in the south-east. When we have a dry season we can ring up these producers and say we can't finish these lambs as well as we would like. And they are happy to buy them six to eight weeks early because they know the product.
<b>Changing cattle systems</b>	We were Hereford and Charolais and a mixture of Charolais Friesian, but we moved to Angus about 10 years ago.	We moved to Angus cattle as they were smaller framed and didn't need as much feed to keep going - but still had calves with good growth rates. After weaning in late summer, we agist our steer calves at Mt. Pleasant, which is only 30km away, but has more reliable rainfall, and sell them at under 12 months to feedlotter. We have moved from an autumn calving to a spring calving, as we were spending a lot of energy feeding cattle in autumn in a time when we traditionally haven't had a lot of feed. The cows are dry in the autumn so we can just let them run on the pastures - we don't have to feed them any hay.
<b>Producing more with less</b>	Back in the 1970s and '80s, our weaning rates were 75-80%. A consultant we've used for some years suggested reducing our stocking rates by 10-15%, which was our feeling as well.	We are going to have to look at reducing the number of ewes, but still produce the same number of lambs through increased weaning percentages. We did the Lifetime Ewe Management program for two years with the North Rhine Sheep Group and it honed our understanding of the nutritional needs of the ewes. We have upped our weaning rates. If we don't get 100%, we are disappointed.
<b>El Niño planning</b>		In January, 2014, we had a catastrophic bushfire which burnt 70% of our country. So we have a lot of rebuilding to do. As we have had some good early rains, the pastures were recovering quite well. The Bureau of Meteorology were predicting a 70% chance of an El Niño, we could expect a drier winter followed by a drier and hotter spring. With that outlook and the fire in May we sold about 10% of our joined ewes - 600 head, at the point of lamb - which will allow us to hold our stock throughout the year and be in a better position for the ensuing years. We scanned the remaining ewes to ensure a good lambing percentage. We'll be better off having extra feed to keep those lambs going rather than having to do a forced sale of some pretty poor lambs.

## Research at work

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

### In this issue

#### 22// Making money

Making More From Sheep delivered participants who made changes an average \$10/ha increase in income. Read about what led to the gains.

#### 24// The next frontier

The findings of the now concluded Beef CRC are underpinning new research to take genetic utilisation to a next level.

#### 26// Barber's pole innovation

It's a tale of innovation and ingenuity and, as a result, producers have a new weapon against costly Barber's pole parasites.

#### 29// The good oil on rust control

Economic analysis of the impact of various control measures for rust in forage oat crops has been completed, providing producers with guidelines on its management.

# Getting the competitive

# EDGE

*The Breeding EDGE program aims to help producers develop a cattle breeding program or improve an existing one. Topics include examining your current situation, reproduction issues, genetics, setting breeding objectives, livestock selection and managing the herd to capture benefits.*

*Here we talk to two producers who attended a Breeding EDGE course with two different objectives and, yet, both are changing on-farm practices as a result.*





Harry and David Kemp, with staff member Steven Hart, are excited about starting a new breeding project with a clean slate.

**Harry Kemp has a 'can-do' attitude, but when his family bought '8 Mile', a 2,800-cow breeder block last year, he knew a lot more than just enthusiasm was needed to make it work.**

**"I said to Dad (David) if we're going to do this, we may as well do it right from the start," he said.**

**T**he Kemps run Lotus Park Feedlot at Clarke Creek and feed, on average, 24,000 animals a year, mostly for 100 days. Their purchase of '8 Mile' was partly to ensure a more consistent supply of cattle for their feedlot.

They predicted when droughts end, feeder cattle will be expensive and difficult to source, so the easiest solution is to breed their own.

Their first step to developing a plan for '8 Mile', was to complete a Breeding EDGE workshop at Biloela last year.

"I'm used to analysing data and had already completed a Grazing BMP (Best Management Practices)\* program so I felt confident this workshop would put us on the right track to improving reproductive performance and profitability," Harry said.

"Breeding EDGE has changed my perspective from being only concerned with the end-product performance to the broader view of reproductive capacity and what traits, environmental influences and management decisions contribute to breeding the best animal possible."

Harry also had another motive.

"'8 Mile' is right next door to the former research station, 'Swan's Lagoon', and a lot of its findings form the basis of this workshop. This made it even more relevant to us," he said.

The 2,800-cow-breeding herd of white Brahmans, which came with the place, was mated year round and most females were on an 18-month calving interval.

There had been no selection pressure for reproduction or fertility and significant infrastructure improvements were needed, such as more reliable watering points, fencing and cattle yards.

"On the positive side, we're starting with a clean slate and it's an opportunity to get the foundations of a breeding operation right from the beginning," Harry said.

"The workshop has given us ideals and standards to strive for."

#### Taking control

Harry is keen to use Estimated Breeding Values, as well as visual assessment, to select bulls in conjunction with Bull Breeding Soundness Evaluations to ensure their sires are fit for joining.

"I want to move from year-round mating to controlled mating and work towards the cows calving every 12 months," he said.

"Researchers achieved it at 'Swan's Lagoon' so it can be done, but I expect it will take about five years."

Currently, the cows have one main calving drop and two smaller drops so they will begin with a three to four month mating period (bulls out December-January), which they hope will allow considerable savings on supplementary licks.

The Breeding EDGE course convinced Harry and David to pregnancy test and foetal age females to sort them into calving groups, cull empty heifers, be more forgiving of first calvers if they fail to become pregnant and implement an individual ID system.

"The workshop focused my attention on the importance of condition score," Harry said.

"I don't want the females below three, we're better off to wean early and with the feedlot we're perfectly set up to do that."

They also plan to:

- test the herd for pestivirus and Trichomoniasis, diseases which can cause infertility through early-term abortion and result in extended calving intervals
- implement vaccination programs for vibriosis and tick fever, with some animals also vaccinated against three-day sickness
- vaccinate cows for Leptospirosis. →

### Snapshot

Harry and Jill Kemp  
'Lotus Park' - Clarke  
Creek; 'Carmelong' -  
Lotus Creek; '8 Mile' -  
Ayr, Queensland



#### Property:

'Lotus Park' - 6,000ha;  
'Carmelong' - 5,668ha;  
'8 Mile' - 37,247ha

#### Enterprise:

Breeding,  
backgrounding and  
feedlotting, targeting  
the Japan ox market

#### Livestock:

'Lotus Park' - 1,500  
breeders (excluding  
the feedlot);  
'Carmelong' - 1,500  
breeders; '8 Mile' -  
2,800 breeders

#### Pasture:

'Lotus Park' and  
'Carmelong' - natives,  
forest bluegrass,  
kangaroo grass, green  
panic, Indian couch.  
'8 Mile' - Seca, stylos,  
black spear grass and  
Indian couch

#### Soil:

'Lotus Park' and  
'Carmelong' - heavy  
clay to sandy loam,  
Brigalow-belah scrub  
country. '8 Mile' - low  
fertility, duplex soils,  
phosphorus deficient

#### Rainfall:

'Lotus Park' and  
'Carmelon' - 650mm  
'8 Mile' - 708mm

\* Grazing BMP is a voluntary, industry-led program that helps producers to identify practices that can improve the long-term profitability of their enterprise. For more information visit [www.bmpgrazing.com.au](http://www.bmpgrazing.com.au)

## Genetics

**Quiet achievers**

As custom feedlotters, the Kemps know first-hand how much temperament influences an animal's ability to cope with stress and their success at converting feed to kilograms of beef.

"Stress is one of the biggest issues in a feedlot and we see how cattle from a lot of different places perform," Harry said.

"The heaviest of the steers will always be the quiet ones. They go on feed easier, cope better with transport, settle quicker and have less ill health."

With this in mind, Harry was interested in the Breeding EDGE workshop's information on measuring flight time as a BREEDPLAN indicator of temperament and plans to use it as a selection tool in his own herd.

"The difference in how flighty animals and quiet animals perform is like chalk and cheese," he said.

The Kemps will also train staff in low-stress cattle-handling techniques and build their new cattle yards based on best practice design.

**Doing it with vigour**

The family is tinkering with their breed composition at '8 Mile', planning to move from a pure Brahman herd to a three-way cross to maximise hybrid vigour.

"We've bought Angus bulls because we think, for temperament and marbling, first-cross Angus are one of the best performers in the feedlot," Harry said.

"I like their polledness. Animal welfare is becoming increasingly important and we need to keep up."

Harry said Angus have extensive BREEDPLAN data which he will use for sire selection and believes, genetically, they are good value for money.

"It's a balancing act to maximise the hybrid vigour without losing the tropical content that is essential to survival," he said.

"We might look at using poll Belmonts, poll Brahmans or Brangus as well."

Through Breeding EDGE, Harry and David created two of their own indexes on BreedObject ([www.breedobject.com](http://www.breedobject.com)) and use those to determine which studs using estimated breeding values have bulls to suit their herd.

# Taking stock

**Biloela producers Megan and Terry Dunne know that sometimes it is hard to see the forest for the trees. But a Breeding EDGE course gave them a clearer view of their herd objectives and how to get there.**

**T**he family farm is a busy place, so busy it can be hard to find time to scrutinise herd management and reproductive performance.

For Megan and her husband Terry, a Breeding EDGE workshop at Biloela was a chance to draw breath and consider opportunities for improvement.

"Unfortunately, it's very difficult to get off farm and we only had time for me to go, but we've gone over everything I learnt together and discussed how it applies to our situation," Megan said.

Before the workshop, Megan and Terry identified reproductive issues they wanted to solve, particularly variations in pregnancy rates across mobs.

"The workshop covered estimated breeding values, Bull Breeding Soundness Evaluations (BBSEs) and how environment and herd health can affect overall reproduction," Megan said.

"Prior to the course, I don't think we recognised how much impact a bull's genetics has on a herd and its overall fertility.

"We haven't been using EBVs to select our bulls but we found that topic very interesting. By not using them, we're not improving our herd as fast as we could be. We'll definitely use them, along with visual assessment, in the future."

The Dunnes run 400 breeders (down from 480 before the drought) on 1,538ha, 55km south-west of Biloela.

When they bought their property 'Shawlands' in 2005, the breeder herd consisted of Charbray, Charolais and Romagnola-cross cows. Since then, Droughtmaster genetics have been used to achieve their breeding objective of producing an early-maturing red animal with minimal hump.

Half the offspring are sold as weaners privately off-farm to repeat clients; the remainder are grown out to 18 months - two years (about 340kg), for the backgrounding and finishing markets.

**Fertility factors**

"We can definitely achieve our breeding objectives quicker by making sure our new bulls are not only the phenotype

*The Dunnes' 2014-drop weaners. Half of them will be sold as weaners, while the remaining will be grown out to 18-24 months (about 340kg) for backgrounding.*



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To design your own selection index visit:  
[www.breedobject.com](http://www.breedobject.com)

we want, but have above average 200-day growth figures and scrotal size, which is linked to both male and female fertility," she said.

The Dunnes' existing bull group will undergo BBSEs before joining starts (October-November) and will be vaccinated several months earlier to ensure sperm counts have time to recover.

"It became evident from the workshop that we need to replace our bulls earlier," Megan said.

"We have been keeping them until they're 10 or 12 years old, we'll now turn them over at seven or eight to

ensure better fertility in our herd and also to keep pace with genetic gain."

When selecting heifers, the couple will focus on females that are early maturing and early to puberty.

"The workshop covered using a pelvimeter as an indicator of the size of the birth canal and ease of calving," Megan said.

The Dunnes also plan to pregnancy test in August, following a five-month mating period, and will cull most empties, except for first calvers.

"We need to look after them and if they miss having a calf we'd give them another go," Megan said.

"The rest - we're better off culling them to make way for more fertile females."

The Dunnes hope to implement an individual identification system, perhaps based on National Livestock Identification System tags, to keep track of their cows' reproduction and productivity.



#### Megan and Terry Dunne

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To find out about upcoming workshops visit:  
[www.futurebeef.com.au](http://www.futurebeef.com.au)

To read more about BREEDPLAN visit:  
[www.breedplan.une.edu.au](http://www.breedplan.une.edu.au)

*Terry, Megan and their children, Harriet, 15, Greta, 13 and Declan, 7, want to make sure their new bulls are not only the phenotype they want but also have above average 200-day growth figures and scrotal size.*



### Snapshot

Terry and Megan Dunne, Biloela, Qld.



**Property:**  
3,800ha

**Enterprise:**  
Beef production

**Livestock:**  
400 breeders

**Pasture:**  
Native pastures, primarily Forest blue grass, buffel

**Soil:**  
Red, hard setting, loamy surfaced, texture contrast soil

**Rainfall:**  
650mm

## Animal health



# Win against worms

Sheepmeat producers and stud breeders selecting sires based on Australian Sheep Breeding Values should focus on both worm resistance (low worm egg counts) and worm resilience (high growth rates).

**That's the finding of MLA-funded research that investigated the cost of an immune response to worm infection among meat sheep.**

The project was led by South Australian Research and Development Institute (SARDI) chief veterinary parasitologist Dr Ian Carmichael and conducted by PhD student Paul Blackburn, with technical support from Sarah Greenslade.

It followed research in New Zealand that found production losses in meat sheep affected by brown stomach worm and black scour worm were largely due to the sheep's own immune response, rather than direct damage by the parasite.

"They found that if you suppress the animal's natural immune response by using corticosteroids, the worms cause virtually no problem," Ian said.

"That result raised a number of questions.

"Firstly, if you're producing an immune response, it requires energy, so what is that energy cost in animals? Could it be reflected in reduced growth rates that are, of course, the key production indicator in meat sheep?"

"The concept of selecting for worm resistance has been well adopted in Australia, so we wanted to see if there was a downside - whether there would be a production penalty, in the long term, for selecting worm-resistant animals.

"The second question related to the type of black scour worms they had studied. Their research looked at *Trichostrongylus colubriformis*, but we wanted to examine the behaviour of *T. vitrinus*, which is a major sheep parasite in Australia's winter rainfall areas that hadn't been studied."

The researchers' first surprise was discovering the two black scour worms behaved very differently.

"We found the immune depression model set in New Zealand gave a different result for *T. vitrinus*," Ian said.

"There was definitely damage caused by the worm over and above the animal's immune response.

"This was surprising, and showed us *T. vitrinus* is a particularly nasty parasite and we can't assume all worms follow the same pattern of behaviour."

### Production impacts

The researchers worked with MLA's Alex Ball and Animal Genetics Breeding Unit director Rob Banks to determine the potential for production cost impacts of selecting for resistance. They identified 22 Australian Poll Dorset sires from the highest and lowest categories of worm resistance (based on worm egg count ASBV) and resilience (ability to withstand an infection without ill effect - reflected in growth rates in ASBV).

The rams were split into a four-way experiment with each sire placed in one of four quadrants: high resistance-high resilience, high resistance-low resilience, low resistance-high resilience and low resistance-low resilience.

A commercial flock of 330 Border Leicester/Merino ewes was artificially inseminated and their lambs formed the basis of the trial. All research was conducted with approval from the Department of Primary Industries and Resources South Australia (PIRSA) and the University of New England Animal Ethics Committees.

### Results

Phase I was conducted in 2012-13 and some of the lambs were artificially infected with the black scour worm *T. vitrinus*. Phase II, in 2013-14, tested the effects of brown stomach worm (*Ostertagia* or *Teladorsagia*). The Phase II results are yet to be analysed.

"At the completion of Phase I, we found the best practical breeding option was to aim for both high worm resistance and high resilience, and not to place more emphasis on one trait over the other," Ian said.

"There were definite production costs in selecting for one or the other, but these differences tended to balance out when selecting for both.

"For example, the cost of immune response in lambs selected for high genetic resistance was approximately 5g/day greater than in those selected for low resistance, but the immune response cost in low-resilience lambs was 21g/day higher than their high-resilience counterparts.

"As expected, higher-resilience animals had faster growth rates than low-resilience animals.

"At the moment, our best advice is a compromise in which animals are selected for both traits, with the long-term result that lambs grow faster and also produce low worm egg counts, thus reducing paddock contamination."



## Resilience vs. resistance: what's the difference?

**'Resilience' and 'resistance' are separate genetic traits and mean very different things when it comes to parasitic worm infections in sheep.**

ParaBoss executive officer Lewis Kahn explained that resilient sheep grow and perform well despite worm infection; resistant sheep have a lower level of worm infection due to a better immune response.

While resilience is difficult to measure and has low heritability, resistance is moderately heritable and can be improved by using Australian Sheep Breeding Values for faecal worm egg count (WEC).

Selecting for resilience - or for sheep that simply 'do' better under normal worm burden conditions - has no effect on resistance levels.

While resilience is desirable, because these sheep are little affected by their own worm population, they will contaminate pasture by depositing worm eggs in their faeces, which can then attack susceptible sheep.

An added concern, said Lewis, is that "when the chips are down and feed is short", resilience is diminished and these sheep are less able to cope with the additional stress of parasites.

The answer is to select for both resistance - based on WEC data - and resilience - based on selecting sheep for production under normal levels of worm challenge.



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## Breeding for resistance

### Snapshot

Phil and Georgina Toland, Violet Town, Victoria



**Property:**  
800ha

**Enterprise:**  
Self-replacing Merino flock, plus Toland Merino Stud

**Livestock:**  
2,000 breeding ewes

**Pasture:**  
Sown to perennial pastures including phalaris and fescue, with plenty of annual species as well

**Soil:**  
Ironstone gravel to sandy loam, to clay loam

**Rainfall:**  
625mm

**A determined effort to breed worm-resistant sheep has seen Victorian producer Phil Toland drastically reduce his reliance on drenches - saving time and money as well as limiting the impact of drench resistance.**

**Phil and Georgina Toland breed sheep in a region particularly prone to two 'scouring' worms: black scour worm and small brown stomach worm.**

Phil, who is president of the Australian Association of Stud Merino Breeders and has a couple of science degrees under his belt, has been taking worm egg counts (WEC) across his entire flock for more than 10 years, and has been selecting heavily for worm resistance as part of the breeding program.

He provides ram buyers with Australian Sheep Breeding Values (ASBVs) for WEC, along with fleece ASBVs and, more recently, fat and eye muscle depth data for dual-purpose customers.

"Selecting for worm resistance has saved us time and money, and the sheep are healthier as well," Phil said.

"We've cut our drenching by half, at least, and because the sheep are more resistant to worm infection they have less production losses over time.

"Reduced drenching also means less chance of drench resistance. It doesn't matter how many chemicals you throw at worms, eventually the parasite develops resistance. That's why it makes sense to breed for animal resistance rather than always looking for another drug."

As well as selecting rams with a negative WEC ASBV, the Tolands cull heavily for animals showing scours or dags, which is a separate trait.



## Animal health

→

"Breeding for resistance is a slow process and it takes a few years before you see the effects, but now we notice the sheep that do have high or positive WEC scores are often the first ones dirty with scours," Phil said.

While other producers may prefer to breed 'resilient' sheep that can carry a worm burden without succumbing to production losses, Phil said those sheep are still spreading worms that will affect the weaker sheep in a flock.

"Ideally you want to produce sheep that are both resistant and resilient," Phil said.

"Resistant sheep won't support worm populations at all, so the result is a lower worm egg burden available on the pasture.

"But they're both important traits - just because one's hard to measure we shouldn't dismiss it."

Phil's WEC testing regime is more intensive than many other commercial producers, as he uses the results to generate ASBVs for his stud rams.

"We test 400-500 sheep at a time, based on male age groups, to determine the sires' WEC value," he said.

"I do my own testing for observation purposes but, in order to have the tests officially verified, I send samples to a couple of different labs in Victoria.

"You need a minimum number of worms in your count before it's considered a legitimate test so the conundrum - as your sheep get more resistant - is that it's harder to get a legitimate test.

"Therefore, you only test during the times you know they'll have the most worms, such as after the autumn break or towards the end of year, before the summer dries off.

"Our drenching trigger for the scouring worms is about 300-400 eggs/gram."

## WEC test adoption rate 'disappointing': survey

Worms or internal parasites are estimated to cost the Australian sheep and wool industry more than \$260 million a year.

**While best practice worm management techniques have been widely publicised, they are not being used as much as was anticipated.**

A survey by Professor Steve Walkden-Brown and Dr Ian Reeve from the University of New England, supported by MLA and Australian Wool Innovation, found that the number of producers using worm egg count (WEC) tests appears to have dropped from 44% in 2003 to 21% in 2011.

This was despite 70% of survey respondents nominating worm egg counts as a "very important or important factor" when deciding if worm treatment was required.

ParaBoss executive officer Lewis Kahn said he could not account for the apparent decline and was disappointed by the result, as worm egg counts could give an early warning of production loss.

Lewis said another concern was the disparity between the prevalence of drench resistance on Australian farms, as determined by a recent study, and producers' perception of their drench resistance status.

Drench resistance occurs when WEC is reduced by less than 98% after treatment.

"In the five years prior to the survey (2007-2011), drench resistance testing had been conducted by 29% of sheep producers, which was unchanged from 2003 levels," Lewis said.

"On average, 48% of sheep producers said they didn't know the drench resistance status of drench groups on their farms. Fifty-five per cent thought they had resistance to benzimidazole and levamisole drenches, while 12% thought they had resistance to ivermectin, 28% to abamectin and 21% to moxidectin.

"This is in contrast to a recent study of 390 drench tests, which found resistance

# 44%

producers used worm egg counts in 2003

# 21%

producers used worm egg counts in 2011

# 70%

producers surveyed think they are a good idea

against benzimidazole and levamisole was present on 96% of farms, and against ivermectin, abamectin and moxidectin on 87%, 77% and 54%, respectively."

On a positive note, Lewis said 43% of worm treatments in 2011 were given as a combination - an important means of controlling drench resistance.

"The goal now is to see that figure rise, as the best time to use combination treatments is before drench resistance emerges," Lewis said.

Lewis encouraged producers to visit the WormBoss website ([www.wormboss.com.au](http://www.wormboss.com.au)), which contains a wealth of region-specific information on worm management best practice.



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Read the full survey results: [www.mla.com.au/internalparasitesurvey](http://www.mla.com.au/internalparasitesurvey)

### ParaBoss

ParaBoss is a suite of three products developed for the management of blowflies, worms and lice. The WormBoss, FlyBoss and LiceBoss websites are sources of detailed management information and regional programs that will assist in managing the major parasite risks for sheep. They have been developed by expert panels of parasitologists and veterinarians. MLA contributes funding to Paraboss.

**paraboss**  
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## Animal health

# BACK TO BASICS:

## Worm egg count testing

This is the second in a series of 'back-to-basics' articles that highlight best practice in different enterprise areas. This topic is worm testing sheep using the worm egg count (WEC) test



### Why test?

WEC test results guide on-farm decisions about:

- whether to drench
- what drench to use
- when to conduct another test.



### Starting out

The first step is to decide the best times of year to test your mobs. The WormBoss program for your region provides recommended times for WEC tests, which can be accessed on the WormBoss website.

The second step is to contact a laboratory or veterinarian (see [www.wormboss.com.au](http://www.wormboss.com.au) for a list of service providers) who will do the worm egg counting. Generally, a testing kit will be supplied or advice on how to collect, store and send your samples will be given. You may be able to do your own WEC testing on farm if you have completed a 'doing your own WECs' course (available through training providers and state agriculture departments).



### When to test?

A fresh sample is essential, so plan testing to suit timing of the mail or courier service to avoid samples being held in the post over the weekend.



### How to collect a sample

1. Follow the instructions from the laboratory or veterinarian.
2. Dung needs to be fresh - it should be still moist and warm, in good condition (approach sheep slowly so dung is not trampled) and with little dirt and debris attached.
3. Collect from a separate pile for each bag/bottle or tray.
4. Soft or runny dung can be collected with a plastic spoon or you can use the bag as a glove to pick up dung and invert to close.
5. If lambs are still with ewes, collect lamb and/or ewe samples separately.



### Finishing off

1. Complete the submission form provided by the laboratory.
2. Pack the samples as instructed on the kit and expel as much air as possible if they are in plastic bags. Keep the samples in a cool place (not the refrigerator) until they are transported to the laboratory.
3. Results are usually provided within 24 hours of the samples being received by the laboratory and larval culture results (if requested) will be provided in seven to 10 days.



### Most importantly...

Use the results. These will be expressed as the number of worm eggs per gram of dung. The laboratory will generally provide recommendations with the results, but you should consult the WormBoss Drench Decision Guide for your region, which will recommend whether to drench, whether a long-acting product is warranted and when to check the sheep again.

## DIY WEC

### When conducting your own WECs on farm, you should:

- collect three pellets/adult pile or five for weaners
- collect from at least 20 dung piles
- where *Haemonchus* (barber's pole worm) is an issue, and if the mob has more than 200 head, collect from each of 40 dung piles
- collect all dung from a mob into one container and mix thoroughly
- conduct your WEC using a sub-sample from the bulk mixture.



There is a range of tools and guides to worm testing and drench decision making at:  
[www.wormboss.com.au](http://www.wormboss.com.au)



Follow the directions of the laboratory or veterinarian when taking samples.



A close up of worm eggs.



Read and act on the laboratory recommendations.

## Business management



# Fertility focus breeds success

## Snapshot

Bernard, Cynthia, Cameron, Ben and Joe Anderson, Clermont and Jericho, Qld.



**Property:**  
'Narrien' - 20,800ha;  
'Alice River' - 19,028ha

## Enterprise:

Breed and fatten Braford's for the EU and PCAS markets, aiming for 320kg carcass weight or better

## Livestock:

2,500 breeders, 5,500 total

## Pasture:

'Narrien' - buffel, Seca stylo and mitchell grass  
'Alice River' - buffel, Seca stylo, mitchell grass, spinifex

## Soil:

'Narrien' - brigalow box sandalwood scrub; areas of creek flats; loamy soil bendee; box ironbark forest country; stony gidgee; some lancewood ridges.

'Alice River' - ranges from good gidgee and brigalow scrub to box ironbark country to desert (spinifex on red soils).

## Rainfall:

'Narrien' - 525mm  
'Alice River' - 475mm

Queensland producers Bernard and Cynthia Anderson have always believed in the value of monitoring performance to improve their herd's fertility. Their recent experience as a co-operator herd with the MLA CashCow project has shown that - although on the right track - there is room for further improvement.

**T**he Andersons run a Braford-breeding operation in the Belyando district, west of Clermont, and know how tough the business can be.

Bernard bought an undeveloped 'Narrien' when he was 19 and, armed with more ambition than capital, set about building an enterprise which has doubled in size, embraces CashCow principles and produces animals sought after by the EU and PCAS (Pasturefed Cattle Assurance System) markets.

"The seeds were sown very early on as to the value of monitoring performance, even at a commercial level," Bernard said.

"Dad and my brothers were a huge help. Dad was control mating 45 years ago and selecting females on their reproductive performance.

"We were motivated to participate in CashCow to look to ways to improve our business so it was in the best shape for the next generation."

The Andersons join about 2,500 Braford breeders between December and April each year on their two properties, 'Narrien' (one-and-a-half hour's drive west of Clermont) and 'Alice River' (about 230km further west).

Their steers and cull heifers are grass-fattened at 'Narrien' for the EU and PCAS markets, aiming for 320kg carcass weight. Tail-end animals (which are slower to make the target weight) are sometimes sent to feedlots, depending on seasonal conditions.

When it comes to bull power, Bernard buys in half their requirements each year and breeds the rest.

"We source bulls from breeders who we know use performance recording and can give us good information about their maternal lines as well," he said.

"In my opinion, there's not enough information about female reproduction and fertility and commercial breeders are crying out for it."

The Andersons keep 25 of their best male calves and reduce that number at weaning, to 12-15 head, selected on structure and temperament.

These are later semen-morphology tested to identify early maturers who, in turn, should sire calves that are early to puberty.

"Fertility is very important to us," Bernard said.

"We expect our heifers to calve as two-year-olds, we pregnancy test our herd each year and have nil tolerance for empty cows or late calvers."

# What makes a productive breeder herd?

MLA's CashCow project has produced data, benchmarks and insights about the productivity and performance of breeding herds in northern Australia.

Among other findings, the research identified three performance drivers which differentiate the most productive breeder herds from others in northern Australia. They are 'time taken for cows to re-conceive', 'calf loss: pre- and post-calving' and 'cow loss':

## Time taken for cows to re-conceive

Influenced by:

- body condition score
- grazing management
- P status
- time of calving
- out of season calving
- bull soundness
- disease status
- genotype
- age at puberty (heifers) and mating weight.

## Calf loss: pre- and post-calving

Influenced by:

- abortion
- disease
- stress
- toxins
- dehorning
- neonatal loss
- mustering
- disease
- heat stress
- wild dogs
- P status
- calf rearing history.

## Cow loss

Influenced by:

- body condition score
- grazing management
- P status
- time of calving
- out of season calving
- disease eg botulism
- cow age.

These findings concur with those of the northern beef situation analysis which identified the top 25% producers influence their herd productivity by:

- reproduction rate
- mortality
- turnover rate.

## Next steps

Measuring the key performance drivers involves:

1. collecting records to calculate annual weaner production and/or annual live weight production
2. comparing records to production benchmarks for your country type
3. comparing records to performance benchmarks for your country type.



To find out more about measuring key performance drivers, download the new publication: *Technical Synopsis: CashCow findings - insights into the productivity and performance of northern breeding herds*: [www.mla.com.au/cashcow](http://www.mla.com.au/cashcow)

Read the findings from the northern beef situation in the new producer manual *Improving the performance of northern beef enterprises* at: [www.mla.com.au/northernperformance](http://www.mla.com.au/northernperformance)

Typically, the Andersons have success with heifer fertility but, like many, have a major challenge with getting their first calvers back in calf.

"They don't get any special treatment such as better nutrition, but they should. It is one of the issues we identified during the CashCow project that we could address to improve our overall herd performance," Bernard said.

"We had about 360 heifers involved in the project and we thoroughly enjoyed it. It was very rewarding getting feedback on dung samples and comparing rainfall and conception.

"I hate the term 'benchmarking' but it was really interesting to see how our heifers performed compared to others in the region."

## CashCow on the ground

Bernard and Cynthia hosted a CashCow field day at 'Narrien' earlier this year, attracting about 60 producers, with some travelling more than 500km to attend.

"The speakers were a real drawcard," Bernard said.

"We had project leader Professor Michael McGowan, researcher and veterinarian Geoffry Fordyce and Dave Smith, from the Queensland Department of Agriculture and Fisheries. Local vet Alan Guilfoyle finished the day on a high note with a talk on subclinical ketosis in beef breeding herds, a condition where energy demands exceed energy intake.

"It was great to hear such knowledgeable speakers talk in our language - it's one thing

to have the gut feelings (about management and herd performance) but they have the hard data from the CashCow project."

Bernard said one of his most important 'take-aways' from the project and the field day was the concept of measuring a beef enterprise in terms of liveweight production (kg/beef produced/cow) rather than on numbers/ha.

"It's a bit of an eye opener and shows you that calving percentage is not everything. It's a much better way for producers to think," he said.



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## Business management

# Making more all round

An in-depth review of the MLA and Australian Wool Innovation developed Making More From Sheep (MMFS) program has revealed participants gained an additional \$10/ha income, on average.

**R**eview project leader and Victorian agricultural consultant Dr Kristy Howard interviewed 179 producers and completed 47 enterprise case studies to determine what impact participating in MMFS events had on businesses.

These producers participated in MMFS workshops across the country and indicated they would make changes on-farm as a result of what they learned on the day.

"Of these producers, 75% had made a change - either the one they planned on making or another change," Kristy said.

"Extrapolated over the entire MMFS participant database, we can confidently say 59% of participants were making changes to their business after attending an MMFS workshop."

Many were even feeling better about their farming situation and have more confidence to make business decisions leading to on-farm change. When it came to putting a dollar figure on the impact of these changes, Kristy said producers increased their annual income by an average \$11,900 or \$10/ha.

On-farm implementation of change was closely linked to each module topic. For example, 35% of producers were weaning more lambs by following new ewe management and lamb survival strategies learned in the 'Wean more lambs' module of the MMFS program.

"The results revealed that MLA's investment in the MMFS program was having a positive impact on increasing producers' skills, knowledge and confidence required to adopt new management practices to improve farm productivity and profitability," Kristy said.

Some producers who planned to make changes had not done so during the survey period because of the timing of seasonal activities, for example, buying new genetics using ASBVs or fertiliser application.

Survey participants said they benefited from speaking to like-minded producers at the workshops and the exposure to experts in topics such as livestock nutrition and health.

"Many producers told me they had benefited personally - not just economically - from making changes to their business," Kristy said.

"They said they felt less stressed and were enjoying farming again because they felt they were in control of their business, which is a really positive outcome for their communities and the agricultural industry."

The case studies conducted as part of the MMFS review showed that many Australian producers don't formally record flock management information or look at history, making it difficult to identify production targets and measure progress over time.

Kristy said she would like to see future events encourage producers to identify and record simple on-farm measures to enable them to track and monitor key productivity indicators over time, such as stocking rate, kg phosphorus applied/ha, weaning rate, ewe mortality, etc. This could include follow-up events where producers can get together to compare before and after the change to demonstrate progress.

*MMFS is a package of principles and procedures, with signposts to further information, tools and learning opportunities to help Australian sheep producers optimise business profitability and control risk. Since 2008, 6,800 producers have taken part.*



**Kristy Howard**  
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The review revealed that, as a result of changes prompted by attending a MMFS workshop, producers reported:

**76%** had increased production

**85%** saw improved animal wellness

**20%** saw benefits to soils and pastures from improved grazing management

**89%** recorded increases in knowledge and skills

**98%** had increased confidence due to practice change adoption

**69%** felt more in control or less stressed

**56%** decreased stock losses.

**Table 1** Common changes made as a result of completing MMFS modules

Making More From Sheep module	Practice change made as a result
Module 1 - Plan for success	Action plan, business analysis, record keeping
Module 2 - Market-focused wool production	Using wool testing information, wool price monitoring
Module 3 - Market-focused lamb and sheepmeat production	Seek market data
Module 4 - Capable and confident farmers	Labour-saving strategies
Module 5 - Protect your farm's natural assets	Improved soil management
Module 6 - Healthy soils	Soil testing and fertiliser use
Module 7 - Grow more pasture	Grazing management
Module 8 - Turn pasture into product	Feed testing, grazing management, rotational grazing
Module 9 - Gain from genetics	Use ASBVs
Module 10 - Wean more lambs	Condition scoring, ewe management/nutrition
Module 11 - Healthy and contented sheep	Worm control, fly control, health management plan

# Simplifying for success

Making More From Sheep workshops were the catalyst for change at Victorian sheep property, 'Leighburn'.

**S**ince moving from his native South Africa 15 years ago - where he was used to a 1,200mm summer rainfall - farm manager Scott Norton has faced a steep learning curve.

Attending *Making More From Sheep* workshops equipped Scott to handle the challenges - and capitalise on the opportunities - of red meat production in Australia.

His local BestWool/BestLamb group and the South West Monitoring Group have also been useful for benchmarking and learning from other producers.

Scott has managed the 1,200ha 'Leighburn', 40km west of Geelong, for Robert Trethewey for the past seven years. After growing up on a 5,000ha sugar cane and timber farm in South Africa and completing a three-year agriculture diploma, Scott originally came to Australia in 1999 on a six month working visa and found a job at Naracoorte in South Australia. He had also worked on farms in the UK but admits he had limited exposure to sheep. "But I now

have a passion for them and a thirst for knowledge about their production."

His current focus is on streamlining the enterprise, with an eye on improving flock nutrition and lamb survival rates. He is reducing the property's beef herd to concentrate on the sheep enterprise, which is also getting a new marketing focus.

Leighburn is home to a 3,500-ewe self-replacing Merino flock, with cull females (about 800 a year) joined to White Suffolk rams.

Lambs were sent to the local sucker market in December, straight off their mothers. The change in direction will see offspring carried for longer, until May-July to reach 24-26kg dressed weight.

Meeting this new target requires a new genetic, and nutritional, direction.

"Improving pastures and increasing lamb marking and weaning percentages present the biggest potential gains in this business," Scott said.

"Our production targets are to lift marking percentages from 86 to 100%, through a

combination of nutrition, genetics, and priority management."

To achieve these targets, Scott is implementing strategies including:

- using Australian Sheep Breeding Values to source rams that will infuse muscle and fat traits to increase lamb survival rates
- condition scoring (learned through a Lifetime Ewe Management workshop) to keep stock at a minimum condition score (CS) three
- ensuring ewes reach CS3.5-3.7 at lambing, so lambs are born at 5kg minimum
- soil tests to identify problem areas
- improving pastures and pasture species selection
- scanning to identify singles and twins for targeted management
- running maiden ewes and ewes with twins in the most sheltered paddocks
- limiting flock size to 200-250/paddock and joining rates to 50:1.

Scott plans to put the new rams over maiden ewes only, so is looking at a three to five year timeframe to fully realise the benefits of bigger lambs at birth and higher survival rates.

'Leighburn' features 10-17ha paddocks in a 'wagon wheel' configuration off a central watering point and rotationally grazes the whole flock.

Paddocks with the best shelter and feed will be reserved for ewes carrying twins, with the next best paddocks for maiden ewes.

The new nutrition strategy will see sheep receive grain and lick as needed. Scott has also implemented feed budgeting (an outcome of the *Making More From Sheep* workshops) and continues to improve pastures.

Paddocks will be planted with lucerne and chicory, and a mix of phalaris and clover. Lambs will be weaned onto the lucerne and forage crops.

Scott is seeking advice from a farm adviser and works with his agronomist on crop and pastures to ensure adequate flock nutrition.

"It comes down to good local advice," Scott said.

"I also plan to use more of the MLA tools, such as the feed and stocking rate calculators."

**Snapshot**

Robert Trethewey and Scott Norton, Shelford, Vic.



**Property:** 1,200ha

**Enterprise:** Wool, lambs and 300ha cropping

(wheat, barley, canola, beans, 50ha of lucerne under centre pivot)

**Livestock:** 3,500 Merino ewes

**Pasture:** Improved

**Soil:** Varied, river flats, loamy sand, heavy volcanic soils

**Rainfall:** 520mm




**Scott Norton**

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Access MLA's feed and stocking rate tools at: [www.mla.com.au/tools](http://www.mla.com.au/tools)

## Genetics

# Stocking the shelves

## with the right seedstock

The Cooperative Research Centre for Beef Genetic Technologies – better known as the Beef CRC – ran from 2005 to 2012, but its research is now coming into its own as the industry uses it to underpin genetic advances.

An MLA-funded research team, led by Dr David Johnston, is 'sling-shotting' reproductive performance progress by intensively recording reproductive data in the daughters of highly influential Brahman, Santa Gertrudis and Droughtmaster sires.

This will rapidly improve BREEDPLAN information and accuracy.

"One of the greatest limitations on profitability in the north is reproduction," David said.

"This project aims to help industry 'get cracking' and put into practice the Beef CRC's finding that reproductive performance is under significant genetic control and can be improved readily by selection.

"We want seedstock producers to be able to select breed improvers for reproduction ASAP"

The \$2.5 million project, which started in 2013, is recording information on the reproductive traits of 2,500 females, by more than 160 sires, selected and bred from research station herds in Queensland and the Northern Territory.

### AI success

Maiden heifers and first calf cows are being naturally mated while older cows are artificially inseminated using Fixed Time Artificial Insemination (AI) programs which, even during the recent drought, achieved success rates between 60% and 70% from two rounds.

All heifers generated from the AI and natural mating are retained and recorded for the project.

"Using ultra-sound, we're scanning heifers for 'age at puberty' and the first calf cows for 'lactation anoestrus interval' (how long it takes to cycle post-calving) which were shown by Beef CRC research to be highly heritable traits," David said.

"We're also recording fat, muscle and weights in relation to body composition, particularly for first calf cows, to ascertain the impact condition has on mating, calving and weaning outcomes for each cow."

### Embracing genomics

David said embracing the rapidly expanding science of genomics was pivotal to driving the rate of genetic improvement in reproduction in northern Australia.

### What are SNPs?

SNPs (single nucleotide polymorphisms – pronounced 'snips') are mutations, or changes in the DNA sequence that act as biological markers which scientists can use as 'landmarks' on the genome.

When SNPs occur within a gene or in a regulatory region near a gene, they can affect how it functions. SNPs can be used for gene discovery or for selection purposes.

"Other industries, including dairy, are already harnessing the benefits and this project is aimed at speeding up the use of genomic selection, particularly for female reproduction in tropical breeds," he said.

"The project females and sires are being genotyped with the latest DNA SNP chip. Initially, this will allow us to assess the performance of current genomic predictions from the Beef CRC.

"We're also genomic profiling those bulls that already have 'days to calving' EBVs, improving their accuracy and identifying those breed leaders for reproductive improvement.

"Further, we have teamed up with a beef genetics project funded by the Queensland Government Smart Futures Initiative and will genotype large numbers of animals in their co-operating industry herds.

"The real power of the project will come when all the genotypic information is combined with the female recorded data. This will drive increased selection accuracy across large numbers of animals in the three breeds."

### Proof in the marketplace

David said producers should start to see the benefits of this project flow into the marketplace by the end of this year.

"The big boost will occur when the heifers generated by last year's AI program start being recorded," he said.

David hopes the five-year project will show beef producers how much they can improve their herd's reproductive performance through genetic selection decisions.

The research team plans to host field days at each of the project sites.



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To find out more about Beef CRC research visit:  
[www.beefcrc.com](http://www.beefcrc.com)

For more on individual breed EBVs visit:  
[www.brahman.com.au](http://www.brahman.com.au)  
[www.santagertrudis.com.au](http://www.santagertrudis.com.au)  
[www.droughtmaster.com.au](http://www.droughtmaster.com.au)



## The mission of the Beef CRC was:

To capture the benefits of the human and bovine genome projects and the 'livestock revolution' by improving the profitability, productivity, animal welfare and responsible resource use of Australian and global beef businesses through world-class gene discovery and gene expression research and accelerated adoption of beef industry technologies.



*Clockwise from above: Whitney Dollemore recording results of ovarian scanning for puberty at the Douglas Daly Research Station in the NT; Research team leader David Johnston with some of the cows and calves involved in the intensive recording of reproduction data; young Droughtmaster and Brahman calves, resulting from AI and natural matings, at Spyglass Beef Research Facility near Charters Towers; an AI program in full swing at the Spyglass research facility.*

## Animal health

# Immunisation breakthrough for sheep

Sheep producers in south-east Queensland and north-east New South Wales have a new tool to manage barber's pole worm, with the release of the world's first vaccine for a gut-dwelling worm parasite.

Despite being prevalent only in summer rainfall subtropical regions, the parasite causes significant problems to producers. While scour worms affect weight gain and wool quality, barber's pole worms cause mortality and contribute to the \$400 million a year cost to Australia's livestock industry from internal parasites.

**The worm's rapid lifecycle and high resistance to drenches makes the vaccine release all the more important, as it gives producers the option to reduce parasite resistance to chemical treatments.**

The vaccine, Barbervax, is the result of an international effort that follows years of research in Scotland by the Moredun Research Institute and recent collaboration with the Department of Agriculture and Food in Western Australia.

MLA funded trial work before the limited commercial release of Barbervax in Armidale, NSW, in October 2014, when all 300,000 doses sold out. More vaccine will be produced in time for the 2015 barber's pole worm risk window in spring.

"MLA invests in research to help manage, control and reduce the impact of animal diseases and parasites, such as this worm, so livestock businesses can be productive and profitable," MLA Project Manager, Animal Health and Biosecurity Dr Johann Schröder said.

Vaccine resistant worms are not expected to evolve, as they do with the use of anthelmintics (drenches). The other good

news is that there are no residue issues and no withholding period with the vaccine, so it can be used by organic producers without compromising accreditation.

Other considerations for producers are:

- Barbervax does not replace the need for drenches and programs to control scour worms.
- Worm egg counts should be conducted to ensure that heavy barber's pole burdens are not present at the second/third injection.
- Strategies such as pasture rotation will reduce worm intake and enhance effectiveness of vaccination.
- Condition score will affect the response of sheep to vaccination (a minimum condition score 3 is recommended).
- Barbervax can be used in conjunction with *Clostridial* vaccines if injected at a different site, or with anthelmintics and insect or lice medication.

Barbervax is registered for use in lambs up to six months of age, and is undergoing assessment for all sheep.

The expected cost of the vaccine is around 60¢/dose, or \$3/head for the entire program.

## In action

Barbervax is given as a series of five subcutaneous injections (1mL) at intervals of about six weeks, to cover the barber's pole worm risk period. Although some additional livestock handling will be required, it can slot into the standard management program in relevant regions, such as the Tablelands of NSW, where the risk period is generally December to April.

An example program is:

- Injection 1: at lamb marking
- Injection 2: three to five weeks later
- Injection 3: at weaning (in conjunction with a drench to control other worms)
- Injection 4: six weeks after injection three
- Injection 5: six weeks after injection four.



The release of 'Barbervax' signals the world's first vaccine for a gut-dwelling worm parasite of livestock.



Scottish veterinary parasitologist David Smith (left) worked with his engineer son, Robin (right), to design a 'worm-harvesting machine' that was integral to the development of the barber's pole worm vaccine.

# \$400 million

annual cost of internal parasites to Australian livestock industry

## Concrete solutions for science



The breakthrough in the development of the ground-breaking vaccine against barber's pole worm came via a 'worm-harvesting machine' developed by Scottish researcher David Smith and his engineer son, Robin.

"The challenge was collecting large amounts of clean worms to harvest their intestinal enzymes in a cost-effective way, so the vaccine could remain economically viable," David said.

The first step was to collect hundreds of barber's-pole-infected sheep stomachs from an abattoir, and turn that "disgusting mess" into a bucket of clean parasites for making the vaccine.

The unpleasant task was made easier with Robin's ingenuity and a prototype worm-harvesting machine, consisting of a cement mixer, a pink hand basin pinched from a rubbish skip and a length of table tennis net lashed to some wire mesh and wrapped around an old bicycle wheel.

"This was slowly refined into NemESys (Nematode extraction System), a gleaming aluminium contraption containing a sieve conveyor, sprayers and basin tilters, but which still sports an eye-catching canary yellow cement mixer," (pictured above) David said.

"Put 10 opened infected sheep stomachs in the cement mixer with a couple of buckets of warm water and, about three minutes later, a mug full of clean barber's pole can be obtained. Who needs molecular biology, when a cement mixer will do?"

Robin also designed an 'automatic stomach opener' to speed up the process, and a pillow-pack filling machine, which provides a sterile environment to fill the vaccine packs.

For veterinary parasitologists, a vaccine for ruminant roundworms was a 'holy grail', according to David.

"Before Barbervax, there was only one commercial vaccine available for any roundworm parasite of any host, including humans," he said.

The key to developing the vaccine was isolating hidden antigens (active ingredients) - proteins derived from the lining of the worms' intestinal cells, which is a part of the parasite not 'seen' by the sheep when it is infected by the parasite.

"When these proteins are isolated and injected into a sheep, the animal responds by making antibodies against them that circulate round in the blood," David said.

When the barber's pole worm feeds on the vaccinated sheep's blood and ingests these antibodies, they attach to the lining of the worm's gut, slowing digestion and gradually starving the parasite. It produces fewer eggs and eventually dies.

The principle for the vaccine was discovered at Moredun more than 15 years ago. When attempts using molecular biology to make a synthetic vaccine over the next 10 years were unsuccessful, the team set their sights on making vaccine from the worms themselves.

The launch of Barbervax last year ended a 30-year quest for David Smith, who has devoted his career to researching immunity to, and vaccines for, parasitic worms of sheep and cattle.

## From lab to lamb



**What does it take to get a vaccine on the shelf? The brains behind Barbervax is veterinary parasitologist David Smith, from Moredun, Scotland. He sheds light on the five-year process:**

- In most countries, including Australia, vaccines have to meet 'good manufacturing practice' standards. Each step of the Barbervax manufacturing process was documented and annually audited by an independent inspector appointed by the Australian Pesticide and Veterinary Medicine Authority (APVMA).
- Techniques and processes were developed and practised at the Moredun Laboratory, before equipment and chemicals were shipped to Albany, Western Australia, where Barbervax is made - no easy logistical feat.
- Preliminary sheep trials (for primary efficacy, dose response, stability, duration of immunity, maternal antibody and therapeutic effect) were conducted on worm-free lambs raised in Moredun.
- These were followed by trials in on-farm conditions in the Northern Tablelands of NSW. Repeat trials had to wait for the right seasonal conditions.
- Because the vaccine was novel and unconventional, the researchers visited the APVMA in Canberra several times to ensure the process was acceptable.
- Researchers submitted 4,000 pages of documentation to the APVMA supporting their request to register Barbervax for use in lambs, and are now preparing more documents to request the label be extended to adult sheep.
- Review and approval of the first application took 18 months before Barbervax was registered by the APVMA for use in lambs on 1 October 2014.
- A larger second batch of vaccine is planned for the 2015 season when it is hoped registration for use in yearlings and ewes will have been granted. Trials with goats are also underway.



[www.barbervax.com.au](http://www.barbervax.com.au)

## Animal health



## Tackling resistance to lift profit

### Snapshot

Mark, Jane and Sam Bunge, Coleraine, Vic.



**Property:** 1,800ha

**Enterprise:** Backgrounding Angus feeder steers and dairy heifers for

the dairy industry; fine wool production

**Livestock:** 1,400 cattle; 12,000 sheep

**Pasture:** Phalaris, ryegrass, sub-clover, chicory, lucerne

**Soil:** Sandy loam

**Rainfall:** 685mm

## Mark Bunge learnt about drench resistance in beef cattle the hard way.

The Victorian producer first uncovered the problem on his 1,800ha property 'Koorinal', near Coleraine, about five years ago, where Mark, his wife, Jane, and son, Sam run a self-replacing, spring-calving Angus herd of 130 breeders, a self-replacing, fine wool Merino flock and background up to 500 Angus feeder steers each year and also run an extensive dairy heifer backgrounding operation.

Ever since, he's been walking the long road back to full drench efficacy using information from More Beef from Pastures (MBfP). In doing so, he has achieved an annual net financial benefit of \$10,000 on his bottom line.

"We discovered our problem after attending an MBfP workshop and learning about faecal egg reduction tests to measure the efficacy of a drenching program," he said.

Mark found his cattle carried both *Ostertagia* (brown stomach worm) and *Cooperia* (small intestinal worm) that were resistant to ivermectin drenches. White (benzimidazole - fenbendazole) and clear (levamisole) drenches remained effective.

"We have several different enterprises on the property and one of the most useful worm control strategies I've learnt is how to use grazing rotations to 'clean' wormy paddocks," he said.

"We find this to be particularly beneficial for our weaner cattle and sheep - our two most susceptible stock classes - and it definitely reduces the number of times we need to drench."

"More Beef from Pastures workshops are not just about learning, they're about sharing what you know and feeling connected with your peers." **Mark Bunge**

Mark uses six-month rotations, starting in summer and winter (his normal drenching times), to exhaust the life cycle of the worm larvae outside the animals and to minimise reinfection.

"We put drenched sheep or cattle into a paddock where they stay for six months," he said.

"Drenching them first is important, as sheep can carry some species of cattle worm. The paddock doesn't need to be rested when the stock are swapped over; however, you might need to time for pasture growth when moving from sheep to cattle."

Mark said drench resistance was an emerging problem and he encouraged producers to conduct resistance tests.

"The tests are simple to do. Collect a random faeces sample from weaners before you drench and then another after you drench. If the drench kills less than 97% of the worms then you have a resistance issue," he said.

Mark said they tested various administration methods of the ivermectin

### Fast fact

In an MLA-funded trial in southern WA during 2010-2011, 63% of farms tested detected ivermectin resistance in *Cooperia oncophora* (hair worm).

drenches on his herd, such as injectable, pour-on and oral drenches, but the results were similar.

"I think our resistance problem stems from our previous management practices - not doing worm tests prior to drenching and relying on tradition, doing the same thing at the same time each year, using the same drench group year after year and not rotating," he said.

"Also, we were drenching most classes of cattle. We now realise mature cows may not need it.

"Conducting regular worm tests has proven to us that trying to judge whether they need drenching just by looking at them is inaccurate. Sometimes they look like they need it but the FEC says no and other times you think they look great but there's actually production losses there you're missing."



#### Mark Bunge

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Learn more: The *More Beef from Pastures Module 6 - herd health and welfare*: [www.mla.com.au/mbfp](http://www.mla.com.au/mbfp)  
[www.mla.com.au/parasites](http://www.mla.com.au/parasites)

## Pastures



Rust resistance trials, showing variation in resistance between varieties. The shorter variety on the left is resistant and the taller variety on the right is susceptible. Both plots were planted at the same time.

**Forage oats are widely grown in the sub-tropics to provide high quality feed for cattle in autumn and winter. However, leaf rust can be a major problem affecting the yield of forage oats in wetter years, and a recent MLA-funded study has looked at the use of fungicide to control rust in oats.**

**L**eaf rust is most prevalent in mild, moist conditions, which in central and southern Queensland and northern NSW, where forage oats are most commonly grown, are likely to occur in early autumn and spring. It is the most common disease of forage oat crops, with 61% of growers recently surveyed having experienced outbreaks in the past five years.

In marginal dryland areas it is unlikely to be beneficial to apply fungicide to control leaf rust (*Puccinia coronata* f. sp. *avenae*) in forage oat crops, according to research by the Department of Agriculture and Fisheries (DAF) Queensland.

But if forage oats are grown in higher rainfall dryland areas or under irrigation, fungicide application can be warranted and economical, according to project leader Bruce Winter, DAF Queensland.

The project assessed a range of variables, including different cultivars, fungicides (Tilt® and Folicur®) and growing conditions (such as different soil types and rainfall levels).

"We found the main factor affecting the economics of applying fungicide to forage oats was the yield potential," Bruce said.

"In marginal dryland areas, fungicide was unlikely to make a difference, as yields were generally low. It became more viable when the crop was growing with higher rainfall or under irrigation."

The level of leaf rust infection was also important.

"Applying fungicide when the level of infection was low (up to 10% leaf area infected) did not produce a significant increase in forage yield," Bruce said.

"But with moderate levels of leaf rust (20-30% leaf area infected), forage yield significantly increased when fungicide was used."

The interplay of these two factors - forage yield and level of leaf rust infection - determined the economics of using fungicide.

"Fungicide application became economical when forage yield was around three tonnes DM/ha for crops with a low level infection and around 2.5 tonnes DM/ha for crops with a moderate level of infection," Bruce said.

"Cattle liveweight prices had only a marginal effect on the net benefit of applying fungicides."

Spores causing rust infection can survive over summer in out-of-season oats and wild oats, so controlling these plants, either with herbicides or cultivation, is important. Spores can also blow in and will often be transported ahead of a storm. They can travel for hundreds of kilometres.

#### Crop inspections

Bruce said managing leaf rust begins with vigilance.

"Leaf rust pustules appear on the lower leaves and stems of forage oats 7-10 days after the crop has been infected," he said.

"They will not necessarily be visible from above the canopy so may not be immediately apparent. It's important to

#### Triggers for rust outbreaks

- Mild wet weather - look for pustules on lower leaves 10 days after onset of mild, wet conditions.
- Wild oats and out-of-season oats growing near crops.
- Outbreaks on neighbouring properties.

open the canopy and inspect the older, lower leaves.

"If you have cool, wet conditions, go out and start looking after about 10 days. That's when the pustules will start appearing.

"A mild infection can rapidly become a major infection, if the conditions are right. So, once leaf rust is detected, it's important to keep a close eye on it and to take appropriate steps to control it."

#### Outbreak options

Bruce said fungicides were effective in controlling leaf rust and the cost of fungicides has drastically reduced in recent years, but they were still not the first choice of control method.

"Either cutting or heavy grazing of oats can help to control outbreaks, particularly if done early when symptoms first appear," he said.

Leaf rust does reduce the palatability of the feed but will not harm grazing animals, so grazing infected crops can be a good option.

"Fungicides are effective in controlling leaf rust and have been broadly used to control rust outbreaks in other cereal crops for the past 10-15 years," Bruce said.

"They can reduce the level of leaf rust in forage oats to a level where no yield penalty will occur.

"We found no difference in effectiveness of the two fungicides we tested - Tilt (active ingredient propiconazole) and Folicur (active ingredient tebuconazole). But both fungicides have a withholding period for grazing of one to two weeks after spraying, so producers need to be careful to avoid problems with residues."



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Forage oat variety guide: [www.daff.qld.gov.au/\\_data/assets/pdf\\_file/0004/61969/forage-oat-variety-guide.pdf](http://www.daff.qld.gov.au/_data/assets/pdf_file/0004/61969/forage-oat-variety-guide.pdf)

# Something to chew on

Building the industry doesn't just happen in the paddock or in the processing plant. The demand for beef and lamb starts in the high chair and around the dinner table.



**B**eef and lamb are an essential part of a healthy, balanced diet, and it is not just adults who should be eating them three or four times a week.

The National Health and Medical Research Council (NHMRC) Infant Feeding Guidelines recommend parents introduce iron-rich foods, such as beef and lamb, at around six months of age. To complement these recommendations, MLA's marketing team has developed a range of beef and lamb recipes and advice sheets suited to this age group for distribution through the children's health sector.

## Storage solutions

MLA nutrition manager Veronique Droulez said this is when a child's iron stores (from birth) began to deplete.

"Optimal nutrition in a child's first two years of life is critical for healthy growth and brain development," she said.

"Adequate intake of micronutrients such as iron and zinc is important during this period, as deficiency has adverse effects on cognition, and can cause reduced growth rate and recurrent infections."

The *Infant Feeding Guidelines* suggest foods can be introduced in any order and at any rate, but they should be rich in iron,

nutritious and of a texture suitable for a child's stage of development.

The guidelines indicate that it is appropriate to introduce meat from six months of age, rather than waiting until nine months.

They recommend young children eat 30g of cooked beef and lamb four times a week from six months of age, with the amount progressively increasing (65g of meat three to four times a week at one year, and five times a week by four years of age).

## Helping hand

MLA consumer research revealed that, while parents know beef and lamb are nutritionally important, they are often unsure of how to feed it to young children and tend to prefer softer, easier-to-eat meats such as sausages, ham and chicken nuggets.

Cooking skills and time were also barriers to feeding meat to babies, as parents didn't know how to turn steak into 'mush' and didn't want to make multiple meals to feed the family.

MLA has developed recipes that address barriers to consumption and support parents to feed the whole family from one meal, even when there are children at different stages of the 'solids spectrum', for example; an older infant, a fussy toddler

and a school-aged child. For example, a meal of beef hamburgers can be mashed with avocado for baby and made into mini-patties for toddlers.

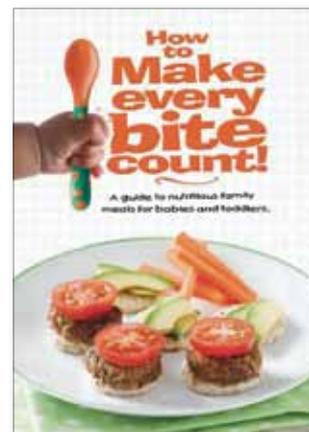
These recipes feature in a nutrition education brochure, 'How to make every bite count', developed by MLA and used by child health specialists such as Janice Wright, who works at the Tresillian Family Care Centre in Penrith, NSW.

As a clinical nurse specialist, specialising in toddler behaviour that can affect sleeping, eating and the relationship between parent and child, Janice supports parents and children at five-day residential programs.

Janice said it was important to introduce new foods to children around the dinner table, so they could see their parents or siblings eating and enjoying them.

"The MLA brochure is a useful resource because it shows parents how to cook the same meal for the whole family," she said.

"If children see eating as an enjoyable experience, they will establish a lasting appreciation for a variety of food, including red meat."



**Veronique Droulez**

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National Health and Medical Research Council guidelines: [www.nhmrc.gov.au/guidelines-publications](http://www.nhmrc.gov.au/guidelines-publications)

Beef and lamb recipes: [www.beefandlamb.com.au](http://www.beefandlamb.com.au)

How to make every bite count: [www.beefandlamb.com.au/Nourish/For\\_babies/Healthy\\_eating\\_for\\_babies\\_and\\_toddlers](http://www.beefandlamb.com.au/Nourish/For_babies/Healthy_eating_for_babies_and_toddlers)

## Recipe

# Beef and sweet potato pie

*Serves: 4*

*Preparation time: 20 minutes*

*Cooking time: 2 hours*

If your family includes young children at various ages, there is no need to prepare different meals to suit different stages. MLA has developed recipes such as this one which is appetising for adults and can be adapted for babies and toddlers.

## Ingredients

600g beef chuck steak, trimmed of fat, diced  
1 tbsp olive oil  
1 onion, roughly chopped  
2 stalks celery, chopped into 2cm pieces  
1 carrot, peeled and cut into 2cm pieces  
1 clove garlic, minced  
400g can diced tomatoes (no added salt)  
750ml beef stock, (salt reduced)

## Sweet potato topping

700g sweet potatoes, peeled and thinly sliced  
2 cups salt reduced beef stock  
¼ bunch parsley, chopped  
2 tbsp margarine spread, melted  
Steamed broccoli and green peas to serve

## Method

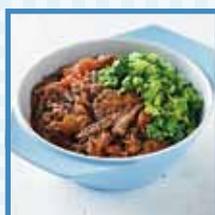
1. Heat oil in a large heavy-based oven-ready casserole pot over a medium heat. Brown the meat in two batches and set aside. Add onion, celery and garlic and cook for three minutes. Add canned tomatoes and simmer for eight minutes until reduced slightly and thick.
2. Return beef to the pot, add 750ml stock and bring to the boil. Reduce heat and gently simmer for 1½ hours. Then add carrot and cover with the lid to cook for a further ½ hour.
3. Meanwhile, preheat oven to 220°C and place sweet potato slices in a saucepan with two cups stock and parsley. Bring to the boil and cook for 10-15 minutes.
4. Drain stock and layer potatoes evenly over the top of the meat casserole, brush with melted margarine. Place in the oven and bake for 20 minutes or until top is golden.

Use cooked ingredients to adapt the family meal for different developmental stages. See examples on the left.



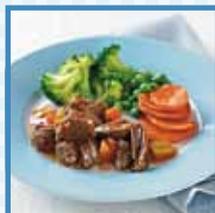
### Silky smooth stage (about six months of age)

Blend ¼ cup casserole with juices and ¼ cup of the sweet potato topping until smooth. Serve with a spoonful of pureed broccoli and peas.



### “Lumpy, mushy” stage (about seven months of age)

Pulse ½ cup casserole with juices and ½ cup of the sweet potato topping in a blender until partially smooth or mash with a fork. Serve with a spoonful of fork mashed broccoli and peas.



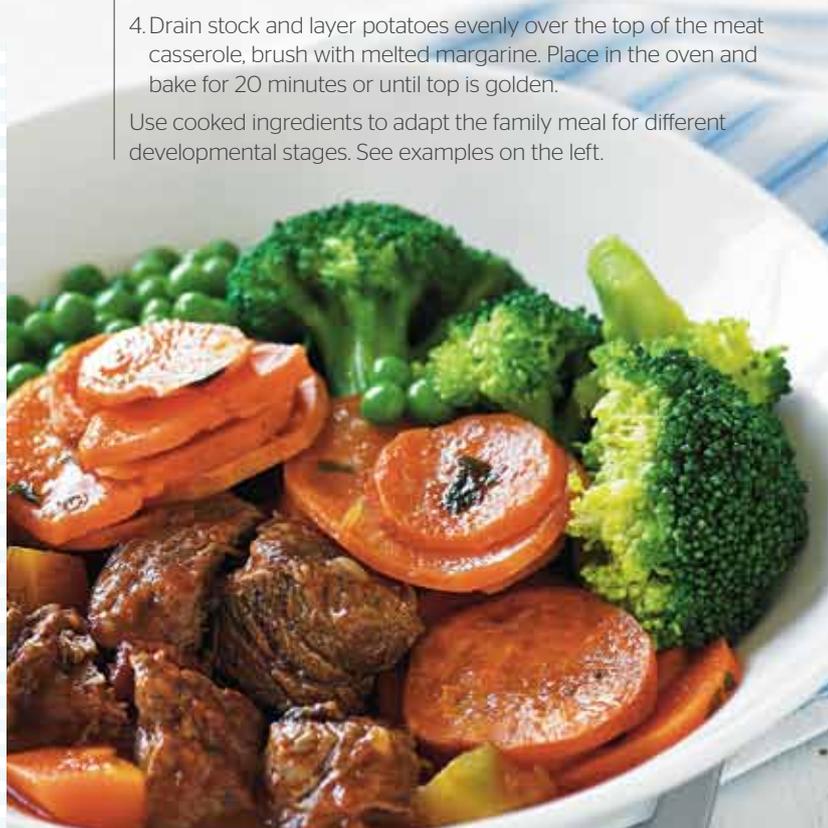
### Finger food stage (about eight months of age)

Put ½ cup of casserole on a plate with the sweet potato topping. Surround with a couple of broccoli stems and green peas.



### Toddler stage (about twelve months of age)

Spoon ¾ cup of casserole into a small bowl and top with sweet potato topping. Surround with broccoli stems and green peas and encourage your toddler to eat with a fork.



## Fast facts

- Weight gain between 0-2 years of age is a risk factor for obesity in later life.
- 1 in 5 Australian children aged 2-3 years are overweight or obese.
- 25% of the brain is formed at birth and most of the remaining 75% is formed by 2 years of age.
- Up to 13% of Australian toddlers may be iron deficient and 32% may be low in zinc.
- Progressing from pureed meat through to mashed, minced and finger foods encourages babies to chew, which is important for speech development.
- After 12 months of age, babies should be consuming family foods consistent with the Australian Dietary Guidelines.

# Feasting on an opportunity

The South-East Asian banqueting sector offers enormous potential for Australian beef and lamb and MLA is ensuring chefs working within the sector are well aware of the versatility of Australian product.



**B**anqueting Innovation Workshops, one-on-one butcher-chef training sessions, the *Asian Cut Guide*, and recipe development and exchange are some of the tools being used by MLA to encourage the use of Australian red meat among South-East Asian chefs.

"South-East Asia is an epicentre of commerce and the sheer volume of business travellers for international conferences is enormous," said MLA's International Business Manager for South Asia, Andrew Simpson.

"There is also a growing middle class, which is conducive to things like having 100-person wedding parties at a hotel, where the hosts want to eat well and show off a little through cuisine.

"Hotels and convention centres cater to this market via banqueting formats, with centres in Malaysia and

Singapore serving up to 6,000 five-star meals a day."

The banqueting sector comprises hotel catering, which appeals to the travelling guest, and special events, such as weddings and corporate functions.

The banquet itself also has two subsets: the Chinese-style banquet, in which many of the meats are pre-cooked in a marinade; and the western-style banquet, which usually involves a long-cooked meal, such as a roast or barbecue.

Traditionally, beef-based Chinese banquet meals have used tenderloin.

"It's easy to use because it holds its integrity and tenderness - but it's also the most expensive beef cut," Andrew said.

"Through MLA training sessions and workshops in the past seven years, we've shown many banqueting chefs that you can achieve equal eating quality using cheaper, non-prime cuts.

"Our butchers have demonstrated that the rump, for example, can be stripped down to its component muscles and used for a variety of dishes, with minimal wastage and reduced cost."

MLA Banqueting Innovation Workshops have been held since 2008, and have attracted hundreds of chefs from high-end hotels, casinos and banquet halls throughout South-East Asia.

The format includes master butchery classes by one of MLA's roving Chinese-speaking butchers, presentations by chef ambassadors, such as Kuala Lumpur Convention Centre's executive chef Richmond Lim (see right), and opportunities for chefs to take part in hands-on cooking and butchery exercises.



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In profile **Banqueting**

## Chef Richmond Banquet boss

In 2014 the Kuala Lumpur Convention Centre hosted

**1.97 million** convention delegates

**1,759** events, which equated to a

**9%** growth in banqueting and functions



Lim //

**A**s executive chef at the Kuala Lumpur Convention Centre, Chef Richmond Lim is responsible for the production of up to 6,000 five-star meals a day.

He and his team of 51 chefs have won multiple awards, while transforming banqueting into 'culinary art'.

In 2008 Chef Richmond joined a group of South-East Asian chefs on an MLA-sponsored trip to Australia to discover how non-loin cuts could help reduce their costs by 20%.

Today, the centre uses only Australian beef and lamb, while Chef Richmond is a regular presenter at MLA's Banqueting Innovation Workshops sharing the secrets he discovered on his Australian trip and which he has since perfected in his own kitchens.

#### What do you like about Australian beef and lamb?

I enjoy using Australian beef and lamb because the meat supplied always falls under my four Ps for successful banqueting - product, promotion, place and price.

The **product** should be an uncompromising reflection of the finest quality with specified details such as origin, method of cultivation and processing, and the Australian meat industry has achieved a stellar reputation for its quality and variety of cuts.

Next comes **promotion**. Any organisation with a credible background and confidence in its products will not hesitate to promote itself and its products, so this is a vital indicator when looking for quality products. When we tell the client we use meat from Australia, they are always happy to hear it.

The third 'p' is **place**. With definitive factors like climate, soil conditions and a disease-free history, Australia has a strong track record for producing quality beef and lamb and is reputed for her stringent safety measures and quality control.

**Last, but not least, is price**. A balance between competitive pricing and efficient management of food costs must be struck to achieve high-yield returns and sustainability in the long-term. The Australian beef and lamb industry has definitely found the balance between cost and quality so the centre will continue to only use Australian beef and lamb in its menus in the years to come.

#### How do you use it in your menus?

How we use the two ingredients really depends on the event and the client's budget.

The culinary team sits down with every banqueting client to better understand their requirements, so we can identify that 'sweet spot' between budget and the best quality produce available.

#### What do you see as the benefits of MLA's Banqueting Innovation Workshops?

The workshops are unique in that they involve both sharing product knowledge and experiences through talks and presentations, plus hands-on knowledge-sharing exercises that deliver fresh ideas and opportunities to taste and experience Australian beef and lamb in different dimensions.

The workshops provide participants with an edge in today's competitive environment, by exploring and experimenting with non-loin cuts that are usually overlooked for certain styles of cooking, and providing tips and ideas on how to manage food service and food costs whilst achieving 5-star banqueting results.

#### What sort of feedback have you received from other chefs regarding the workshops?

They not only challenge participants to 'think outside the box' but also keep the basics top of mind when dealing with the different cuts.

The majority of 'glowing remarks' usually pertain to the hands-on tutorials and innovative aspects of the workshops.

#### Do you think there is potential for non-loin cuts to be more widely utilised in the South-East Asian banqueting sector?

Yes, the popularity of non-loin cuts in not only South-East Asian banqueting but global banqueting is definitely on the rise. And the fact that exploring and experimenting with non-loin cuts is one of the highlights of any MLA Banqueting Innovation Workshop proves it.

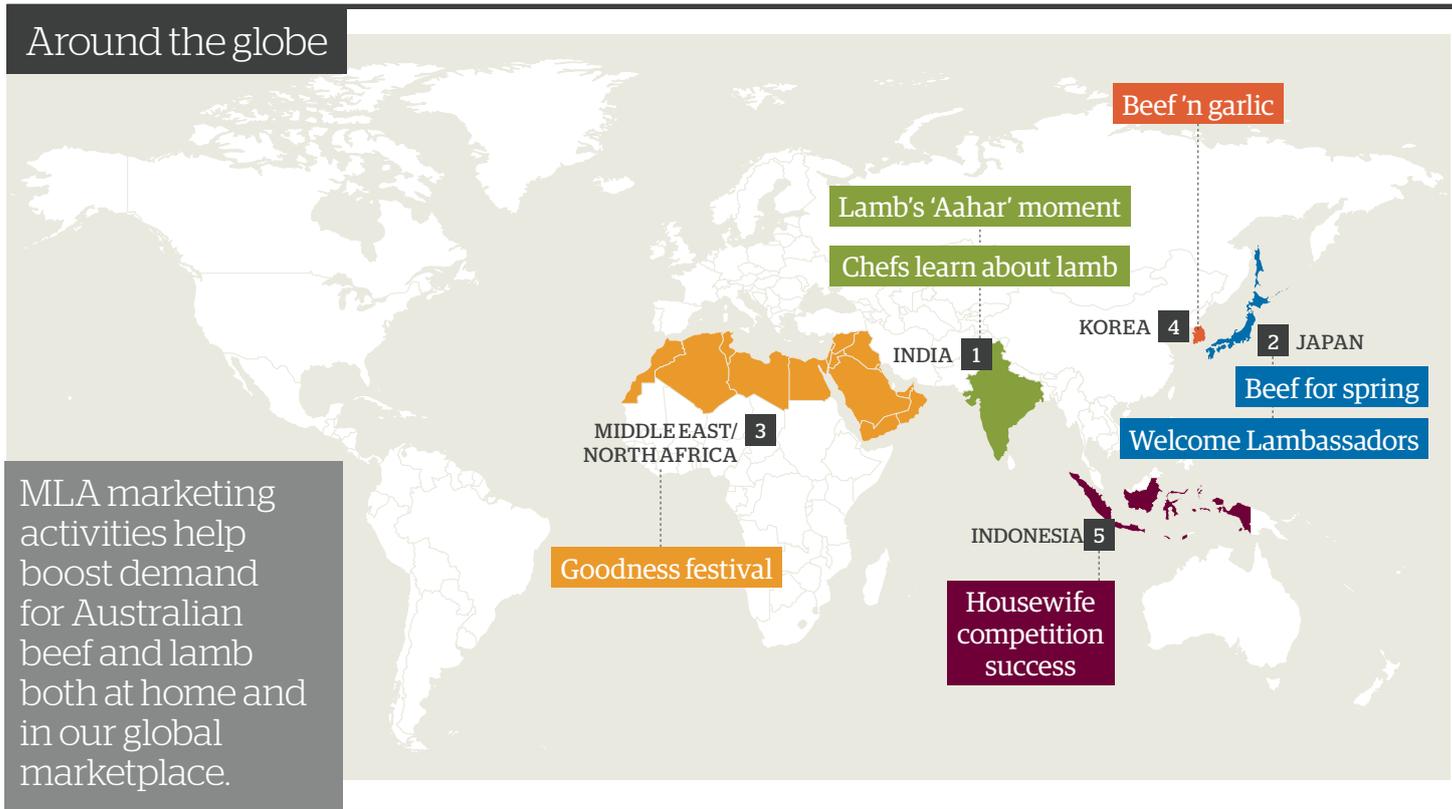
For me, there is always room for further innovation when it comes to using non-loin cuts, no matter the type of cuisine...which is what makes the culinary industry so exciting. However, the importance of research and development cannot be underestimated. They are integral to the banquet planning process, especially when experimenting with unfamiliar cuts.



[www.klccconventioncentre.com](http://www.klccconventioncentre.com)

*Executive chef Richmond Lim uses only Australian beef and lamb in his kitchens at the Kuala Lumpur Convention Centre.*

## Around the globe



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

**1 INDIA****Lamb on the menu**

At least one new trade connection was made and several new importers were identified when MLA participated in the Forum of Indian Food Importers' Pavillion at Aahar (Hindi for 'food'), the largest food and hospitality trade fair in India.

MLA partnered with six Australian exporters to host a site, which featured a local chef preparing popular local dishes with Australian lamb leg and shoulder cuts, as well as grilled lamb cutlets. This was MLA's third consecutive year at the event, which ran for five days in March, involving 807 companies from 22 countries and about 25,000 attendees. The event also

created awareness of the brand profile of 'True Aussie' lamb and goatmeat among trade and consumers.

**Lamb learnings for chefs**

More than 800 Indian chefs learned about Australian lamb at the sixth Indian Federation of Culinary Associations' conference in Chennai, India. MLA sponsored the event to educate chefs about the versatility of Australian lamb cuts and the variety of cooking techniques. The lamb leg and rack usage demonstration generated interest from the students and senior chefs attending.

# 800

**Indian chefs learn about Aussie lamb**

MLA's Master Chef Tarek Ibrahim provided a lamb carcass and cooking demonstration and discussed the qualities of Australian lamb and its production systems and demonstrated the range of cuts available to chefs.

**2 JAPAN****Beef's spring fling**

MLA worked with Japanese TV celebrity Masaki Ueshima to introduce 20 new Aussie beef recipes to MLA's Aussie Beef website, as part of a new campaign to celebrate spring in Japan. The campaign was designed to educate grocery buyers about the versatility and taste of Aussie beef, and to motivate people to cook with different beef cuts and be inspired to cook beef for themselves and their friends.

The Aussie Beef website and logo were also recently refreshed to incorporate the ideals of "safe, delicious and healthy" beef to Japanese consumers. The two week website campaign gave users

the chance to win prizes by picking their favourite beef meals that they'd like to have cooked for them.

**Japanese Lambassadors**

To coincide with the 'Year of the Sheep' MLA partnered with key influencers of the Japanese foodservice sector to develop the 'Lambassador' program. Nine industry professionals (food stylists, butchers, chefs and a restaurant owner) were handpicked to become advocates for Australian lamb - taking part in cooking classes, recipe book development, ad campaigns, social media promotion and a tour to Australia in April. The tour included a visit to a Victorian prime lamb property, lamb butchery masterclasses and showcase dinners with Australian wholesalers and retailers. The 'Lambassadors' have significant profiles in Japan and MLA will now work closely with them to promote lamb to consumers, increase awareness and boost the value of lamb in Japan market.

**3 MIDDLE EAST/  
NORTH AFRICA****Going for goodness**

One of the United Arab Emirates' (UAE) largest retail chains hosted a culinary celebration called 'Australian Goodness Festival' across its 32 stores in April. Supported by MLA, the two-week Australian food showcase was opened by Australian Trade and Investment Minister Andrew Robb.

MLA's chef Tarek showcased 'True Aussie' beef and lamb with live cooking demonstrations, and featured point-of-sale material and in-store branding of meat counters across all stores. Chef Tarek also hosted a cooking challenge where 10 students from five culinary schools in the UAE created one innovative dish from a box of mystery ingredients.

The centre of the plate was Australian beef and lamb with the winning team - the International Centre for Culinary Arts - winning a five-day apprenticeship in a Melbourne restaurant after creating a rack of lamb with wilted spinach, mushroom fricassee and fried gnocchi.

The event was reported in major UAE media outlets, the *Khaleej Times*, *Gulf News* and *The Gulf Today*, with a combined readership of more than 251,000.

# 251,000

consumers in UAE read about Australian lamb and beef

**4 KOREA****Beef and garlic match for success**

Australian beef sirloin and tenderloin steaks were the flavour of the month when they were introduced on the

# 159%

increase in beef sales



menu of Korea's first garlic-themed Italian restaurant "Mad for Garlic". The venue saw a 159% increase in beef sales, a 49% increase in customer numbers and sold roughly 20 tonnes Australian beef during the one month promotion.

MLA provided 3,000 menu books and 400,000 placemats, as well as banners, posters and tabletop materials to stimulate sales from the garlic and steak menu. The restaurant currently has 34 domestic branches in Korea, and is aiming for another 13 by the end of the year.

**5 INDONESIA****Housewives learn about beef**

More than 100 housewives who read *NOVA*, the biggest selling women's lifestyle tabloid in Indonesia, went on a culinary tour to Puncak, a holiday spot in West Java. MLA partnered with the magazine, which has a circulation of more than 700,000, to educate consumers about the benefits of 'True Aussie' beef in Indonesia. Participants learned about Australian beef cuts from executive chef Pasya Trijaya who demonstrated handling and cooking mince and steak cuts in easy, practical and healthy ways.

**On the ground****South Korea**

**Michael Finucan**  
MLA Regional Manager -  
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While Korea has been a stable, long-time customer for Australian beef - and provides our third largest beef export destination - it is lamb which has recently shown considerable growth.

Australian lamb exports to Korea rose 52% from 3,175 tonnes swt in 2013 to 4,837 tonnes swt in 2014. The market also took 1,210 tonnes swt of mutton in 2014.

Traditionally, Koreans perceived lamb as strong smelling and tasting, but a new wave of interest in barbecue and skewer-style restaurants is seeing consumers tasting lamb and going back for repeat purchasing.

Australia holds a 94% share of the sheepmeat market in Korea and shoulder (2,164 tonnes swt) and breast and flap (1,122 tonnes swt) account for 68% of the orders.

We've supported this growth with a promotion of Australian lamb using the 'True Aussie' branding through retailers. A promotion in late December was held in E-mart supermarkets to coincide with a celebration of the 'Year of the Sheep'. MLA supported it with media, point-of-sale materials and pack stickers. The event created \$136,500 worth of media coverage.

However, beef is still king in Korea. Korean housewives, who are the meal deciders and purchasers in households, only want safe and trusted food for their families. Since the US BSE crisis in 2003, Australian beef has "owned" safety in the imported beef category.

Per capita beef consumption has steadily grown since 2003 and is currently 10.2kg/head/year. It is forecast to reach 11.1kg/head/year in 2023.

To take advantage of these opportunities, MLA is building on the brand image that Australian beef is not only clean and safe to eat, but it is offered in a variety of affordable cuts suitable for a range of dishes to suit families, such as lamb *galbi* and lamb *bulgogi* (both marinated barbecue dishes).

The challenge for the year ahead is to meet demand in light of restricted supply due to expected tighter beef production in Australia and ongoing strong demand in other export markets.

## Beef and lamb projections

# Weather forecasts influence market forecasts

The weather once again impacted on sheep and cattle markets in the first quarter of 2015 and MLA's projections for the second quarter suggest it will again influence supplies. Here we take a closer look at the updated projections.

## Lamb supplies

With a pronounced slowdown in sheep slaughter, and continued high lamb slaughter, the national flock forecast for 30 June 2015 has been revised to 69.8 million head (down 1.8 million or 3% on 2014) - falling below the 70 million mark for only the second time in more than a century.

After a drier than expected first quarter, Australian lamb slaughter for 2015 has been revised higher to 21.4 million head - still 850,000 head lower 2014. While slaughter was high, the reductions are likely to roll out over the coming quarters, becoming more pronounced as the year progresses, especially considering the high slaughter in the second half of 2014.

Tighter supplies are likely to become more prevalent once seasonal conditions improve.

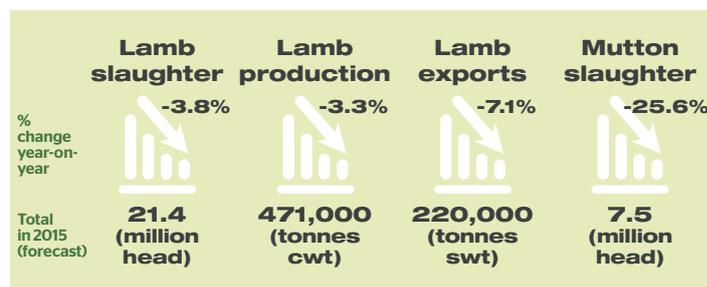
The Bureau of Meteorology's three month rainfall outlook points to 'above average' rainfall for the majority of southern Australia, which, if it eventuates, will go a long way to relieving the lamb supply pressure.

While the first quarter was dry, producers' ability to consistently finish lambs - grain assisted in some instances - has minimised the impact of the poor feed conditions on lamb carcasses. As a result there was a significant upward adjustment in average lamb carcass weights, which, when multiplied by the revised higher lamb slaughter for 2015, indicates lamb production may reach 470,800 tonnes cwt - though still back 3% year-on-year (Figure 1).

## Sheep supplies

The 2015 sheep slaughter forecast (7.5 million head) remains in line with the initial prediction, at 26% below year ago levels, with signs of tightening supplies already evident. The mutton production

## Sheep and lambs: forecasts at a glance



forecast for 2015 remains at 171,000 tonnes cwt, back 27% year-on-year.

## Sheepmeat exports

In contrast to the high Australian lamb volume exported during the first quarter of 2015, global demand for lamb is likely to remain subdued over the coming quarters. A forecast slowdown in global sheepmeat demand - resulting from slow moving product in the US and China, two of Australia's largest sheepmeat trading partners - may serve to cap Australian sheep and lamb prices for much of this year.

Nevertheless, underpinned by higher lamb slaughter, Australian exports for the first quarter were up 6% year-on-year, with the US (12,302 tonnes swt), China (8,714 tonnes swt) and the Middle East (16,037 tonnes swt) the largest markets, while shipments to the EU were 3,031 tonnes swt. Exports in 2015 are forecast to fall to 220,000 tonnes swt (see Figure 2).

Mutton exports for the first quarter were lower year-on-year, underpinned by lower slaughter, with the largest volumes going to the Middle East (15,069 tonnes swt) and China (9,957 tonnes swt).

Figure 1 Australian lamb production

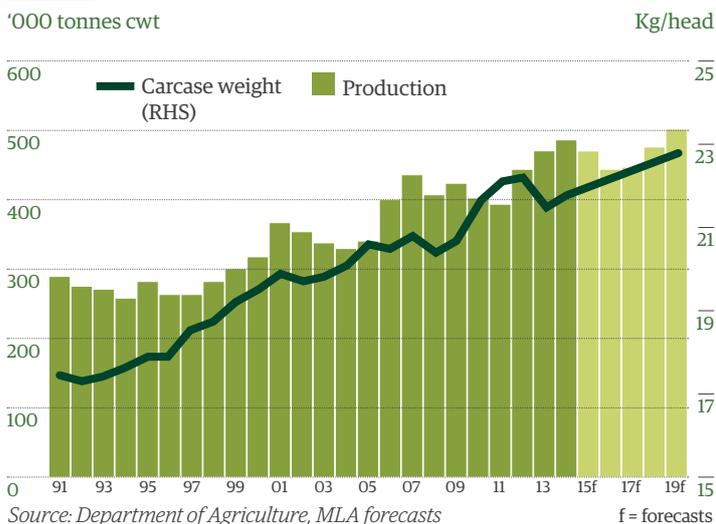


Figure 2 Australian lamb exports



### Cattle supplies

Influencing the second quarter update were persisting dry conditions for most of Central Queensland, and the likelihood of minimal restocking interest until the next wet season. However, the rainfall outlook for southern Australia for the June quarter is positive, which would see the southern markets support prices and alleviate some of the slaughter pressure.

Following higher than expected cattle slaughter across the eastern states during the first quarter, the national adult kill has now been revised up to 8.2 million head. While this is still 11% below last year's three decade high kill, it will make the rare sequence of three consecutive years with greater than eight million adult cattle killed. High slaughter is anticipated to continue through the second quarter of 2015, before tapering off as the year progresses - provided average rainfall is received at the beginning of the northern wet season.

Looking further out, a 9% year-on-year decline in adult cattle slaughter is anticipated for 2016, to 7.5 million head, before bottoming out in 2017 at 7.1 million head.

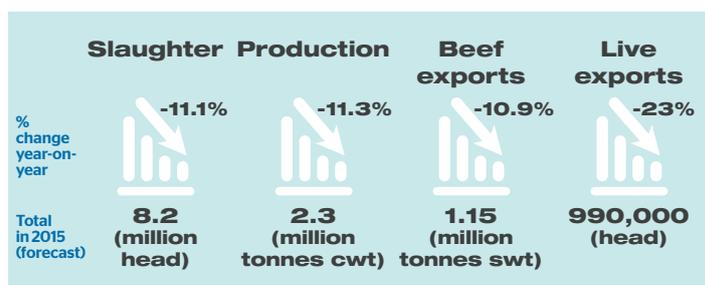
With slaughter adjusted higher, and carcase weights expected to be steady with last year, Australian beef and veal production is anticipated to be 2.28 million tonnes cwt - back 10% from last year (Figure 3). The projected large number of cattle on feed will act to partially offset the proportion of store cattle slaughtered, which is expected to be significant, especially in northern Australia.

In line with slaughter, the greatest decline in production is likely to be felt in the final quarter of 2015, before entering a period of consistently lower year-on-year production throughout 2016 and 2017.

### Beef exports

International demand for Australian beef and veal for the remainder of 2015 is set to continue with the same intensity as the first quarter. Exports for the whole year are forecast to reach 1.15 million tonnes swt, back 11% year-on-year, but still the third consecutive year over one million tonnes swt (Figure 4).

### Cattle and beef: forecasts at a glance



After three months beef exports are up 8% year-on-year, at 297,000 tonnes swt, with the US comfortably the largest market, accounting for 36% of volume, followed by Japan (23%), Korea (12%) and China (9%).

The northern live cattle trade is also likely to be boosted in coming months, following the release of Indonesian import permits for 250,000 feeder cattle in the second quarter.

The continued strength of the cattle market will depend on whether or not the positive three-month rainfall outlook eventuates, and the timeliness of any rain. The robust international demand fundamentals will remain in play and act as support for cattle prices, but a significant contraction in supplies to processors is needed to sustain substantial support for the market. Northern prices should be underpinned by the large pre-Ramadan shipments of cattle to Indonesia, but considerable uncertainty remains over Indonesian permits for the remainder of the year.

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Read the latest cattle industry projections:  
[www.mla.com.au/cattle-projections](http://www.mla.com.au/cattle-projections)

Read the latest sheep industry projections:  
[www.mla.com.au/sheep-projections](http://www.mla.com.au/sheep-projections)

Figure 3 Australian beef and veal production

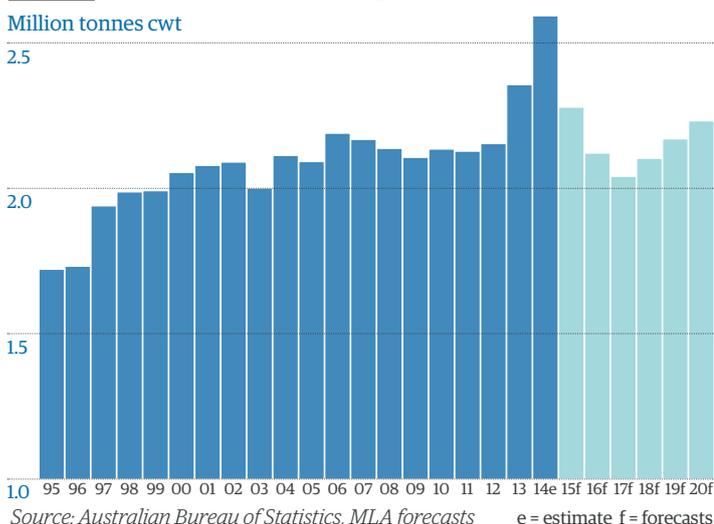
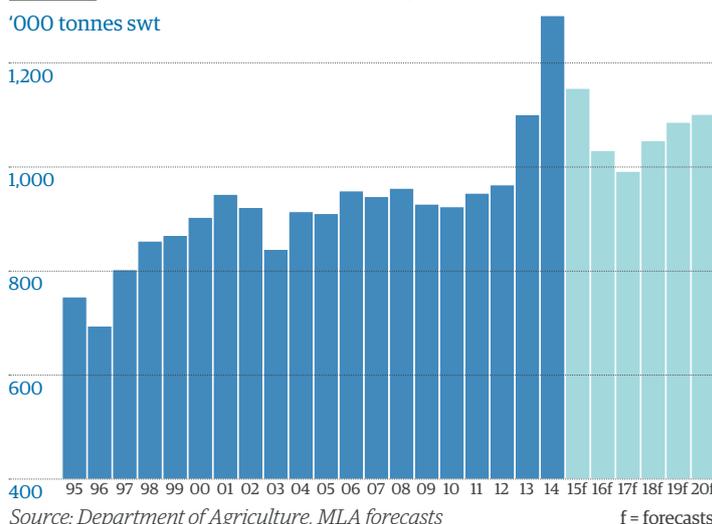


Figure 4 Australian beef and veal exports



## Rockhampton//Beef Australia 2015

It was an action-packed week at Australia's beef industry event at Rockhampton, where a crowd of 90,000 listened, learned, talked and tasted at Beef Australia 2015.

But what were producers going to do when they get home? *Feedback* talked to a sample about what they took away from MLA's Innovation Marquee sessions and Producer Forum.



↑  
**Left to right: Michael Chaplain, Allenstown Qld; Angus Creedon, Rockhampton Qld; Jeff Ruckman, Beaudesert Qld, attended the MLA Producer Forum**

**Michael:** "There is a lot of good data coming out from different research projects and new technology which is allowing producers to make informed decisions about genetics, land management and their business which will lead to huge improvements across the sector."

*Homework:* "I will follow up on some of the presentations, particularly the genetics and herd management ones, which link back to calving or weaning percentages."

**Angus:** "I liked the innovations to do with pasture management and efficiency in how you manage your property, especially the telemetry data collected by drones."

*Homework:* "I will definitely be looking at improved pastures to increase weight gain in feeder cattle and better genetics. If we can increase calving percentages, pregnancy rates and weaning rates it all adds up in the end."

**Jeff:** "I am particularly interested in the commercialisation of genetics, and the capture of the data and how we can use that to increase the productivity of our herds. It's such a powerful tool to lift our industry substantially."

*Homework:* "I will see how I can enhance my business plan with genetic tools, so I can have meaningful discussions with clients about what opportunities this might open for them."



↑  
**Glen and Sonya Shelley, Wandoo Station, Sarina Qld attended the MLA Producer Forum**

**Glen:** "It's pleasing to see that what we implemented three years ago after Beef 2012 is still at the forefront of driving change in the beef industry."

*Homework:* "We will be concentrating on cost of production, reducing overheads, and obviously improving the genetics in the herd to produce better progeny."

**Sonya:** "I think it's important to come along to these seminars because it helps you get a focus on where you can improve your own business."

*Homework:* "We have made a diligent effort to implement what we learn at educational seminars. The MLA Forum was a lot of good revision for us so we don't lose our focus."



Video presentations from the MLA Producer Forum are available at [www.mla.com.au/beef2015forum](http://www.mla.com.au/beef2015forum)

## Upcoming events

### MLA Southern Producer Forums

MLA is hosting a series of regionally focussed producer forums in southern Australia. The 'Your levy, Your Industry' forums are designed to provide beef, sheepmeat and goat producers with an opportunity to hear from MLA's Managing Director, Richard Norton, learn about MLA's new R&D consultation model and have input into the future direction of their marketing and R&D levies. Most importantly, the forums will allow for MLA to hear directly from producers.

#### When and where:

16 June - Bordertown, SA  
 17 June - Clare, SA  
 18 June - Broken Hill, NSW

#### Bookings and for more information:

There is no cost to attend but registration is essential via [www.mla.com.au/events](http://www.mla.com.au/events)  
 E: [info@mla.com.au](mailto:info@mla.com.au) // P: 02 9463 9333

### Webinar: On-farm biosecurity - what you need to know to protect your livelihood

The Livestock Biosecurity Network (LBN) advocates good on-farm biosecurity practices as a buffer to the spread of infectious diseases or harmful pests.

To hear more about how you can manage the risks to your property, join this webinar led by Emma Rooke of the LBN.

#### When:

12pm AEST, 21 July 2015

**Bookings:** Julie Petty // M: 0411 680 516 or E: [jpetty@mla.com.au](mailto:jpetty@mla.com.au)



Find more events and information at [www.mla.com.au/events](http://www.mla.com.au/events)

→ **Left to right: Sherill Stivano, Bellevue Feedlot, Roma Qld; Tess Herbert, Gundamain Feedlot, Eugowra NSW attended the MLA Innovation Marquee**

**Sherill:** "I particularly enjoyed the session with Catherine Marriott on producers engaging with consumers via social media. Consumers trust producers, not corporates."

**Homework:** "I am already a heavy social media user, but I will use Catherine's advice. When you start out you learn the hard way and her advice is very useful."

**Tess:** "Catherine Marriott discussed six top tips to think about when engaging via social media and I really liked the points she made around 'listen don't judge', 'end conversations' and 'distil your message'."

**Homework:** "I am a big Twitter user and I will definitely be thinking about Catherine's tips at home."



← **Craig and Leslie Hanson, Gympie Qld, attended the MLA Innovation Marquee**

**Leslie:** "We are new to the beef industry and it's nice to talk to some of the speakers and know that we are on the right track and that we are using the best practices we can on our property."

**Homework:** "I am interested in some of the different accreditation programs for our cattle, but we'll take things one step at a time."

**Craig:** "The speakers were very interesting. It is important to show our customers how we are looking after our cattle and our land."

**Homework:** "Events like this help people like us get started and find all the information we need. We love learning and keeping abreast of what's going on, and we'll be back in three years time."



→ **Paul and Annette Roots, Hernani NSW, attended the MLA Innovation Marquee**

**Annette:** "I think it was a really wonderful seminar (conducted by agvocate Catherine Marriott) and proves the point that we need to advocate for our industry."

**Homework:** "We can all speak more for our own industry - we know who we are and what we do. It's important that we all do this more often and are proactive."

**Paul:** "It's great to see the innovation and progress in the industry. I liked the way Dr Alex Ball explained that you need to make one small change at a time - change is a continual process."

**Homework:** "At seminars you hear some things you already know, and also pick up new information to help you put it all together."



# Apply now for Nuffield Australia Farming Scholarships

Nuffield Farming Scholarships award producers a life changing scholarship of international travel to study a primary production topic of choice, linked to their business and industry.

It is a 16-week program of group and individual travel, taken over two years with flexibility provided.

Scholars increase production knowledge and personal and management skills. It is a unique opportunity to stand back from your business and study a topic of interest.

The MLA-supported Scholar in 2014, Michael Lyons, said:



*Kara Knudsen,  
MLA-supported 2013  
Nuffield Scholar*



“I applied to travel overseas, learn more about agriculture and bring back ideas that might help our business. What I gained was a whole lot more.

“The Nuffield journey cleverly supports and stretches you through series of events including the Contemporary Scholars Conference and Global Focus Program, before you are let loose on the world to pursue your own individual research.

“So, if you are looking for a challenge, some direction or an opportunity to ‘stretch’ yourself, then don’t hesitate to apply for a Nuffield Scholarship.”

Nuffield has been selecting scholars for more than 60 years and it is the leading program for primary producers in Australia. There are now 350 Nuffield Scholars, who have had an in depth experience with global agriculture.

**MLA supports Nuffield Scholars so apply now.  
Applications for 2016 scholarships close 30 June 2015.**

## Information:

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