

Feedback

Doing it with data

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A note from the MD...



Welcome to the digital future edition of *Feedback*.

As you know, our industry already generates a vast volume of data across the value chain. An enormous opportunity exists to harness this data and ensure it is collated, made meaningful and is accessible to the industry to inform their business decisions.

This edition of *Feedback* covers what MLA is doing to seize this opportunity - through MLA's Value Chain Digital Strategy, myMLA, objective carcase measurement, the use of the drones and precision agriculture. Look out for the Digital Future circle icon throughout the magazine to identify these articles.

Last month MLA announced the launch of a new single sign-on package with access to online services for producers. These services include a myMLA dashboard where users can customise weather information, industry news and prices and markets information. As part of this launch, MLA's 'prices and markets' section of the MLA website has been broadened

and also offers deeper analysis and improved functionality for producers. I encourage you to sign up to it for free at www.mla.com.au/mymla

Many organisations and industries are striving to understand the productivity gains from collecting and managing data.

MLA understands how data can improve industry integrity systems so Australian red meat remains at the forefront of global markets, as consumers demand more knowledge of food systems.

As always, I'm happy to hear from you.

You can contact me at managingdirector@mla.com.au

Richard Norton
MLA Managing Director

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New online services tailored to you

A new single sign-on package with access to online services for producers, tailored to their individual needs, has been launched by MLA.

The services, designed to help producers make more informed business decisions with greater ease, can be used at any time on any device and include:

- **Single sign-on** - MLA has created a streamlined system for using one user name and password across key industry systems including National Livestock Identification System (NLIS), Livestock Production Assurance (LPA) and National Vendor Declarations (NVDs), Meat Standards Australia (MSA) and Livestock Data Link (LDL).
- **An upgraded Prices & Markets section of the MLA website** - this section now offers a greater variety of market information, deeper analysis and improved functionality.

→ **myMLA** - this provides a single platform for receiving data from multiple sources. It is delivered via an online dashboard (see right) and includes a personalised seven-day weather forecast, customised market information, local events, industry news and research resources and tools.

MLA Managing Director Richard Norton said the new services are part of MLA's focus on improving and simplifying access to key information and making life easier for producers.

"MLA is committed to helping producers run more profitable, sustainable and globally competitive businesses through increased adoption of new technology and use of data," Richard said.



"These new online platforms are a first step toward capturing the enormous wealth of data being generated across our industry and delivering it through a single integrated information platform.

"We have developed these services following direct feedback from levy payers and

industry who have advocated for the introduction of a single user name and password across key industry integrity systems such as NLIS and LPA.

"The upgrade to the prices and markets information MLA delivers has been in direct response to producers' appetite for easier access to market information relevant to their business and opportunities to carry out in-depth analysis of that data."

Richard said MLA will now look to users to provide feedback on how the services can be improved and developed further.



myMLA

an online dashboard offering customised information, resources and the latest industry news

Single sign-on

one user name and password to access key red meat industry systems

Market information

more valuable and interactive online market information and analysis

→ Available now at www.mla.com.au



To access myMLA visit www.mla.com.au/mymla

To view a video overview of the new services visit MLA's meatandlivestock YouTube channel

Lamb unites

One of MLA's recent lamb campaigns builds on the theme of 'You'll Never Lamb Alone' by celebrating Australians from all walks of life coming together over a lamb barbecue.

The barbecue has appearances from familiar faces such as Sam Kekovich, Olympian Cathy Freeman and former National Rugby League player Wendell Sailor. Other Aussies at the barbecue include culinary gem Poh Ling Yeow, cricketer Adam Gilchrist and comedian Rhys Nicholson.

MLA Group Marketing Manager Andrew Howie said this campaign put lamb at the forefront of celebrating modern Australia.

"Australia is the greatest country on earth and lamb is the nation's favourite meat. We have brought those two things together to prove we should be able to celebrate this great country every day of the year," he said.

"Our marketing campaigns have proven very effective in lifting lamb sales at key times of the year for the industry - and this is particularly relevant in January. Last year's (2016) campaign was the most successful to date."

Andrew said that like the recent spring lamb activities, this campaign was about expanding the reach of lamb to all Australians and new consumers, and used a number of channels and activities to reach as many Australian consumers as possible.

These included the traditional television and online commercial, outdoor advertising, online platforms such as Facebook and YouTube, and a number of product-focused, point-of-sale promotions in foodservice, independent butchers and major retailers.

"Ultimately, as the face of Australia continues to evolve and change, we need to make lamb relevant to a diverse, modern Australia," Andrew said.

"This campaign does that by celebrating the diversity of Australia."



Check out the campaign at the **'We Love Our Lamb' Facebook** page or at the **'We Love Our Lamb' channel** on YouTube



Accolades for phosphorus work

A paper on soil phosphorus and net accumulation of phosphorus under pasture, which resulted from MLA-funded research, has won the Soil Science Australia 'Publications Medal in Soil Science' at the recent Soil Science Conference in New Zealand.

Co-funded with Australian Wool Innovation, the research was conducted by the University of Adelaide, University of New England and CSIRO.

The study aimed to identify which forms of phosphorus accumulated in soil under permanent pasture from a medium-term (13-year) field experiment.



The full paper can be requested via www.researchgate.net

One-stop employment shop

People in Agriculture is a new online platform providing resources and guides for agricultural employers and employees in one hub.

MLA worked with other agricultural research and development corporations to create People in Agriculture. The platform offers practical tips, templates and examples that can be easily applied to streamline employment processes and assist and inform best practice employment on farms.



www.peopleinag.com.au

Screen time for northern beef

A series of videos created by the MLA-supported FutureBeef program can help producers upskill on important aspects of running northern beef enterprises.

Located on the FutureBeefAu channel on YouTube, the videos (available in 15-30 second snippets or two to four minute versions) were created with MLA funding. Producers and industry specialists are featured in each of the videos.

Topics include:

- Why you need ground cover
- Growing grass for good ground cover
- Minimising soil erosion for better grass cover
- Locating watering points for efficient grazing
- Good records - giving you data that delivers
- Body condition scoring - the key to breeding
- Bull buying - getting more bang for your buck
- Protecting your business with a biosecurity plan
- Implementing a farm safety system
- New cattle welfare standards.



Go to www.youtube.com/FutureBeefAu and click on videos

Dame Edna sells beef

Dame Edna knows 'You're Better on Beef' and she has shared this knowledge with Australian women in the latest MLA beef campaign.

A key element of the campaign is an impassioned address to the nation, featuring Dame Edna.

MLA Group Marketing Manager Andrew Howie said with Australians leading increasingly busier lifestyles, it is important to demonstrate that beef is a perfect solution for a healthy, mid-week family meal.

"The speed of modern life is relentless and too often when feeling rundown and tired we blame our time-poor lifestyles, despite research showing that the actual reason for one in three women feeling a bit flat is they are not getting enough iron from their diet," he said.

The campaign also delivers its core message about 15-minute beef meals along the consumer's entire path-to-purchase, including small and



large-format outdoor advertising, radio and television advertising, recipe information and in butchers.

"We've developed the 'Beef-15' mid-week meal platform which sets out a wide range of healthy beef meals that can be prepared in just a few simple steps in 15 minutes or less. And that's 15 real minutes - not celebrity chef minutes," Andrew said.



Check out the 'Iron Lady' video on the 'You're Better on Beef' YouTube channel

New technology to fast-track NVDs

An electronic National Vendor Declaration (eNVD) system is now available to producers and participants in the value chain.

An eNVD is an electronic version of the current paper NVD document which is required for all movements of cattle, sheep and goats in Australia. The eNVD system transfers electronic livestock integrity data from a livestock producer through the value chain to the intended receivers.

To enable industry to start using the system, MLA has granted the first commercial license to Australian

software provider, Aglive, to release its eNVD App following extensive trials of the technology.

It is expected that other commercial licenses will be granted to more Australian software companies over the coming months, who will release further eNVD apps once trials of the technology are completed.



Read more about eNVDs
www.mla.com.au/lpa
Access Aglive's eNVD App
www.aglive.com

Market snapshots

Find out what's driving demand in Australia's main beef and sheepmeat export markets with MLA's new *Market snapshots*. They summarise key insights in the consumer, retail and foodservice sectors as well as highlights about trade access, livestock exports and other suppliers.



www.mla.com.au/market-snapshots





The information generation

Data has the potential to generate sizeable productivity gains in the red meat and livestock industry. Recognising this, a new strategy is focused on finding the best ways to manage the vast amounts of data generated in the industry so producers can use it to make smart business decisions.

Dr Jane Weatherley and her team from MLA are leading the development of the red meat industry's Value Chain Digital Strategy.

The strategy aims to allow participants to make data-driven commercial decisions at every point in the red meat value chain.

"We hear much about the 'digital future' but that future is already here. There is an enormous amount of data already being generated and our job is to find the most efficient ways of collecting and storing useful data and ensuring it is accessible for the benefit of the industry," Jane said.

Ideas hub

Step one in the strategy development was the Australian Red Meat Industry's Digital Strategy Forum and Workshop in Brisbane in October 2016.

"More than 300 delegates heard from 18 leaders in fields such as digital technology within and outside agriculture, finance, market research and on-farm management," Jane said.

"After the forum, there was a workshop involving about 90 participants, who were mainly producers and representatives from all of our peak industry councils, pastoral companies and processors.

"The participants came up with priority areas for the strategy and endorsed MLA's role in developing and implementing it for our industry."

The priority areas identified were:

- addressing connectivity issues
- scoping and initiating an open data platform
- leveraging digital technology to get closer to the consumer
- using digital technology to support the industry's social licence to operate
- developing value chain optimisation, agility and innovation
- using precision technology across the value chain (farm, feedlot, factory, logistics/transport, distribution, retail/foodservice, consumers)
- increasing industry competency and personal development
- simplifying systems - making it easier for producers to comply with regulation/integrity requirements.

"One role of the digital strategy is to identify ways we can make it easier for producers to comply with the requirements of our integrity systems. For example, we're streamlining the paperwork required for our integrity systems and making it electronic through the eNVD system," Jane said.

"Another example is addressing the issue of tag retention and looking at innovative ways to identify individual animals.

"It's exciting because we know there are significant ideas right across the value chain and we will be scoping ideas from

around the globe to address these problems through digital technology."

Capitalising on the gains

Jane said many well-known digital technology companies, such as Hitachi and Ericsson, had already moved into defining digital solutions for agriculture.

"We can look at how these companies service other industries such as defence, medical, mining and engineering, and see how we can adapt technologies to provide solutions for our industry," she said.

"Drones and DEXA [see stories in this edition] technologies are good examples of this."

As well as the opportunities, Jane said there are still many unknowns.

"There are a lot of questions yet to be answered, such as data ownership rules and processes for sharing data," she said.

"Answering these questions is a critical component of the strategy, as we need to ensure commercial imperatives are protected, while at the same time create a clear value proposition that will drive the willingness of the full value chain to share data."

In the next few months there will be further consultation with producers and stakeholders across the value chain through peak industry councils and regional producer discussions.



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Watch Jane's presentation from the MLA Red Meat Industry Digital Strategy Forum at: www.mla.com.au/digitalforum



Data management at the coalface

Elise Bowen, Young Gun winner at Lambex 2016, shares her thoughts on the value of data and her tips for making the most of it.



Elise's family run a White Suffolk and maternal stud flock in York, Western Australia, and she has been recording measurements and submitting them to Sheep Genetics (Australia's breeding evaluation service for sheep breeders and buyers) since she was in high school.

Elise's involvement with data collection has involved working with stud and commercial clients and the research sector, since obtaining a Bachelor of Animal Science (Honours) and establishing her business, Sheep Data Management, in southern NSW in 2014.

"The value of data collection is well accepted in the stud industry and my work with stud breeders primarily involves entering all of their pedigree information and raw data such as live weights, fat and muscle scans and so on, into the national database to generate breeding values," Elise said.

"It's important to be thorough, to eliminate errors and ensure all the management groupings are correct, so the national system's data quality is high."

Elise also works with commercial breeders who don't need to record pedigrees for their animals, but are interested in collecting data to drive on-farm production efficiencies and profitability.

"For example, I'm working with some commercial clients who are focusing on

ewe efficiency, which is a particular interest of mine and something I have been working on in my family's flock," she said.

"Ewe efficiency is a ratio of product produced (in this case, kilograms of lamb weaned) relative to ewe maintenance cost (ewe size).

"Efficiency can be improved by increasing kilograms of lamb weaned - through higher flock pregnancy scanning percentages, better lamb survival and increased lamb growth rates - and by decreasing mature ewe size, which means a lower feed requirement and therefore allows for increased stocking rates.

"For commercial producers, data collection is about identifying the animals that are producing the most for you and rewarding them, and then identifying the ones that aren't performing and are just costing you money."

Elise works with commercial producers to:

- record pregnancy scanning results and apply positive selection emphasis to twinning ewes
- record ewes that have lambed and lost (dry at weaning) and apply negative selection emphasis to those
- calculate standard reference weight (live weight at condition score 3) to allow comparison of mature ewe size and apply negative selection emphasis to heavier ewes

→ monitor ewe liveweight response to supplementary feeding and remove ewes that fail to regain lost condition fast enough.

Elise's top tips for on-farm data collection

Don't collect needless data: If the data is not important to your business you're never going to analyse it and even if you do, you won't make changes to management practices based on it.

Collect data that is relevant to your breeding objective: Identify your breeding objectives (fertility, growth rate, yield etc) then work out what data would have the most impact on those objectives.

You don't have to use electronic identification (eID) to collect data: If you're not set up for eID, don't be put off. A lot of people aren't using eID yet, but they still collect meaningful, basic data using visual tags. It takes a little longer and you need to be more diligent to avoid human error. Many people move to eID after starting a data collection system because they recognise the additional efficiency benefits.



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Objective measurement to add value

Data generated by objective carcase measurement technology has the potential to improve productivity and profitability throughout the entire supply chain, according to Associate Professor Graham Gardner from Murdoch University.

Graham leads a \$12.5 million government and industry-funded project developing devices that can work at chain speed to measure saleable meat yield, bone and fat levels, as well as eating quality attributes.

He says the data will enable producers to maximise profits by better targeting markets and improving grid compliance, as well as improving genetic gain based on feedback into genetic databases.

"The more detailed and accurate feedback on their carcasses that producers get from the abattoir, the better their ability to respond and drive profitability. This may involve changing production systems or adapting their flock or herd through genetics," Graham said.

"Processors will benefit by achieving maximum yield from carcasses through more accurate cutting, streamlining processing via automation of some manual tasks and allocating carcasses to the most profitable markets. Objective measurement of eating quality attributes will give their customers more confidence in their products.

"Consumers will benefit from having confidence in the known quantity and quality of meat they are buying, every time."

Technologies in the research program include Dual Energy X-Ray Absorptiometry (DEXA) - which is ready to be rolled out commercially in smallstock abattoirs - and hyperspectral cameras, CT scanning and 3D cameras.

The project is also developing information systems that will capture the data for use in genetic databases and producer feedback systems, as well as in carcase sorting and retail inventory management systems.

The research is laying the foundations for possible future value-based marketing and significant industry-wide productivity gains through processing automation, genetic improvement and data-based on-farm decision making.

What about the digital consumer?

Part of embracing the livestock industry's digital future involves understanding how consumers will learn about red meat, as well as how they will shop for it.

At the Red Meat Industry Digital Strategy Forum in 2016, Jarrod Payne (pictured right) from market research consultancy Millward Brown, spoke about the influence of social media on food trends.

"It's no surprise that people are now getting huge amounts of news and information online, and millennials and younger groups get a lot of their food knowledge from social media, in particular," Jarrod said.

"Given that the internet is a self-curating system, all sorts of theories about food are able to proliferate on social media sites and those theories don't necessarily reflect the science."

Jarrod said 'celebrity nutritionists' like Pete Evans, with 1.5 million Facebook likes, and the Banana Girl, with more than 220,000 Facebook likes, can have significant influence.

"Celebrity nutritionists' messages are largely un-curated, but the internet gives them a voice and a platform and their social media following gives them influence," Jarrod said.

"My view is that the red meat industry must have a role in the conversations consumers are having online."

Jarrod advocates "going out there with scientific information to try and clarify some of those un-curated messages", which MLA already does, as well as providing general dietary information.

"That might mean simply having a



positive, informational role that focuses on holistic dietary requirements - not just red meat - in a way that is interesting and valuable to consumers," he said.

"You have to give social media users something of value in order to gain influence - they do not like to see self-interest."

Jarrod said a challenge for red meat marketers in the future would come from the integration of smart technology in the home - including smart fridges and phones - which would automate food shopping based on algorithms and allow little opportunity for marketing messages to divert shoppers.

"The opportunity exists to embrace the technology as it comes out," he said.

"If computer programs will be making buying decisions, then we need to ensure red meat has a role within the algorithms that make those decisions.

"This requires a fundamental shift in the way consumer interaction occurs, necessitating not only a focus on direct communication but also a broader role in influencing health bodies and technological solution providers.

"We need to be part of the conversation and part of the algorithm."

**Graham Gardner**

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Watch Jarrod's presentation from the MLA Red Meat Industry Digital Strategy Forum at: www.mla.com.au/digitalforum

Data-driven transparency

Weight, by itself, is a limited metric to value livestock. Additional objective information can help the entire red meat value chain make more informed business decisions to improve on-farm and processing efficiency, and deliver a product which is preferred by consumers.

A major step towards achieving this objective is MLA's proposal for the voluntary, industry-wide adoption of DEXA (Dual Energy X-Ray Absorptiometry) as an objective measurement tool in meat processing.

Here we talk to MLA's General Manager – Research, Development and Innovation Sean Starling about how building data capture into the supply chain will benefit the whole industry.

Q. What are the drivers behind MLA's plan to rollout objective carcass measurement systems?

The need for more transparency and objective measurement in over-the hooks selling has long been a high priority for producers. That, and a range of other needs, has contributed to MLA's desire to fast-track the adoption of DEXA across industry.

These drivers include:

- **Evidence based** - the need to provide increased transparency in the transaction between producers and processors
- **On-farm** - producers wanting more objective feedback information to make on-farm management decisions relating to breeding, feeding and animal husbandry
- **Linkages** - companies within value chains wanting to strengthen their relationships with suppliers by sharing objective information on animal and carcass performance
- **Consistency** - the need for a single platform for determining and reporting meat, fat and bone composition to avoid the confusion, different accuracies and information types that would be offered to the market if a range of platforms is adopted instead
- **Adoption** - to avoid the potential of the supply chain becoming a mix of those with feedback technology and those without for an extended period
- **Systems** - to create more value for producers and processors through increasing efficiency and precision management within the value chain

Figure 1 The Australian red meat industry's objective measurement program



- **Future proofing** - contributing to the industry's continued evolution into a whole-of-value chain mindset, helping us to better compete with our international competitors.

Q. How can more accurate data be used within the supply chain?

Supply chains and individual enterprises will use the information in different ways to suit their business objectives and models.

Genetic and seedstock participants will be able to work within their supply chains to develop long-term objective feedback performance metrics.

Producers and lotfeeders will be able to use the feedback lean meat yield (LMY) information, along with other historical data such as weather, feed on offer, husbandry activities and animal health to develop models and plans for future flocks and herds to ensure maximum market target specifications are achieved.

Processors will use feed forward information to marshal and sort incoming livestock, in addition to driving automated processing solutions, both requiring additional investments by the processing sector.

The entire value chain may be able to link consumer feedback to these measurements and others to continue to strive to attract maximum consumer reward.

If MLA's proposal is adopted by industry, MLA will offer DEXA units to processors for installation on a voluntary basis, the LMY data from which will be collated within the industry's integrity company for aggregation, research and development, and impact measurement.

Of course, value chains will also have the opportunity to use the information in other commercial ways.



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Building capability

Equipping tomorrow's leaders

A former chef, a head stockman and a mining professional are among the young people starting careers with agri-food businesses in a new program designed to bring fresh insights to the red meat value chain.

The Food Value Chain Innovators: Emerging Leaders Program involves 15 young professionals from four sectors – red meat, horticulture, dairy and fisheries – participating in the two-year intensive development program.

The program is funded by agri-food businesses in partnership with MLA Donor Company (MDC) and the Australian Government Department of Agriculture and Water Resources under the Rural Research and Development for Profit program.

MDC Chief Executive Officer Dr Christine Pitt said the program helps to attract, develop and retain talent for the red meat industry.

“The specific aim is to help young professionals build strategic value chain thinking and capabilities,” Christine said.

“It will equip them to work with Australian food value chains seeking to identify high-value growth opportunities in domestic and export markets based on market and consumer insights.

“It’s targeted principally at young professionals interested in a career in the Australian food and agriculture industry who have recently completed a master’s degree or are near to completing one.”

The red meat industry will work with the other agri-food sector partners to create new high-value products and services for customers and consumers that will drive innovation and growth.

Here, we meet two of the Food Value Chain Innovators.

Innovator: Helen Qiao

A belief in agriculture’s opportunities, combined with a personal interest in the journey of food from paddock to plate, led Helen Qiao to switch from the mining resources sector to the red meat industry.

In early 2016, Helen started working as a food innovator for Harvey Beef, Western Australia’s largest beef processor and one of only two in the state accredited for export to China.

Helen said she enjoyed her move into the agri-food sector, which is a major shift from previous roles she held in the mining resources sector and international project management, and as a translator and interpreter.

“In my career, I’ve done relationship management and project management, mostly on projects and relationships between Australia and China, but also in other Asian and African countries,” Helen said.

“Food and agriculture have always been personal interests, and this is the industry I want to work in. On a personal level, I’m a foodie – I’m interested in how food is produced and marketed, and how it’s being consumed.

“From a business perspective, I can absolutely see the potential of working in the industry in Australia and Asia. I think it’s an industry with lots of challenges but also enormous excitement and potential.”

Owned by mining magnate Andrew Forrest, Harvey Beef’s facility processes 140,000 cattle a year and exports 50% of its product.

Helen is doing a Master of Business Administration (MBA) focusing on operational strategy to further understand the processing industry, and believes her previous experience in relationship management with Chinese businesses and government bodies is a key strength.

“The future is not going to be a closed economy. We can’t consume all that we produce and the export market is where it will grow. We shouldn’t just compete on price, but with high-value, high-end produce,” Helen said.

“We have been doing business with Asian countries for a long time and Japan is one of our biggest partners. We have a good understanding of how to do business with Japan and Japan understands how Australia does business, but that’s taken 20 to 30 years.

“Now that we’re dealing more with South-East Asia and China, we particularly need to build those relationships like we have with Japan and understand their ways of doing business.

“In Asian countries, it’s really about understanding and not imposing your own criteria, and having realistic expectations.”



Food Value Chain Innovators: Emerging Leaders Program

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

Innovator: Joel Bentley



From head stockman in the Top End through to agribusiness economist, Joel Bentley has worn a number of hats in his career in the cattle industry.

Now Joel is channelling his skills and experience into an innovative new 'big picture' role with Australia's largest vertically integrated beef company, Australian Country Choice (ACC).

Since April last year, he has been an agribusiness innovation officer with ACC, based at the company's Brindley Park feedlot near Roma, Queensland.

"ACC is a paddock-to-plate company, with feedlots at Roma, Cecil Plains and the Brisbane Valley, as well as a number of cattle breeding and backgrounding properties throughout Queensland and a processing plant in Brisbane," Joel said.

"At the moment, I'm working on ACC's data information systems and how we can better capture and utilise data throughout the supply chain to develop intuitive and real-time reporting systems to lead to more sustainable and profitable decisions.

"That has involved going around all of our properties and feedlots and investigating how our current systems are meeting our needs.

"I'm working with another innovation officer who is based at Cannon Hill and works with the processing arm of the business, so we're completely across the supply chain, working with everyone, collecting ideas and adding to ACC's value proposition.

"The role is evolving as we discover new opportunities to align our value chain with developing R&D and our customers' expectations."

Joel grew up on a sheep and cattle property at Eulo in south-west Queensland and worked as a jackaroo and later as head stockman for Consolidated Pastoral Company in the Northern Territory.

"I never thought in a million years I'd ever go to university, but after being a head stockman I went to the University of New England and did a Bachelor of Agribusiness, majoring in rural science," he said.

He went on to work as an agribusiness analyst with the National Australia Bank and as an agricultural economist with the Queensland Department of Agriculture and Fisheries before taking up the role with ACC.

Supporting sheep leaders

Fifteen members of the sheepmeat industry have created history by being the first participants in the inaugural Sheepmeat Industry Leadership Program.

Run by the Australian Rural Leadership Foundation, the leadership program is part of the Sheepmeat Council of Australia and MLA joint initiative 'Building Leadership Capability for the Sheep Industry'.

The initiative's objective is to ensure the Australian sheep industry attracts, develops and retains people with leadership skills to contribute to the long-term viability of the industry.

The leadership program has two intakes – in 2017 and 2018 – of 15 participants a year. Each position is valued at more than \$10,000 and covers training, course materials and travel to the two face-to-face sessions. Participants will be required to contribute \$500.

Sheepmeat Council of Australia President Jeff Murray says the SCA wants to champion leaders in the industry and upskill them to take on greater roles in the future.

"Through involvement with the SCA, participants will develop a greater understanding of leadership roles and responsibilities in the industry and the value of collaborations, advocacy and effective negotiation," he said.

Participants for 2017 are:

NSW: Allison Harker, Yass, Ben Haseler, Gundaroo, Dan Korff, Hay, Gregory Sawyer, Cudal, Isaac Allen, Forbes and Elise Bowen, Wagga Wagga (see profile on page 7)

Victoria: David Lomas, Dunkeld and Graeme Maher, Lubeck

South Australia: Chelsea Dahlenburg, Naracoorte

Western Australia: Janelle South, Darkan, Josh Sweeny, Perth and Michael Wright, Boyup Brook

Queensland: Alister Persse, Goondiwindi and Peter Thomas, Ilfracombe

ACT: John McGovern.



www.sheepmeatcouncil.com.au

Meat safety

Food safety research breaking down barriers

Maintaining access to critical export markets and ensuring Australia's red meat products are both hygienic and high quality are the twin aims of MLA's investment in food safety research.

"MLA has a two-pronged approach to food safety research," said Ian Jenson, MLA's Manager of Market Access Science and Technology.

"The first is about ensuring markets continue to accept our product by overcoming technical or non-tariff barriers to trade."

Non-tariff barriers are a major impost on the red meat industry; currently costing about \$1.3 billion annually.

They include rules and requirements around issues such as sanitation, cut size, transport and shelf life, that are additional to requirements for the domestic market.

"When importing countries implement new rules we are usually only given a short period of time to implement them or negotiate an alternative," Ian said.

"Once the issue has arisen we don't have time to commission research to support our arguments. For this reason we conduct research on a range of food safety issues so we can provide our trade negotiators from the Department of Agriculture and Water Resources (DAWR) with the most up-to-date information to argue on our industry's behalf."

Ian said MLA's second approach to research was about continually seeking improvements to food safety, while ensuring eating quality was not compromised.

Below is a snapshot of recent MLA Food Safety Program projects:

Ahead of the game

Project: Survey of beef products' *Salmonella* status

"We are expecting markets such as the US to introduce new rules about the presence of *Salmonella* and some kinds of *E. coli* in a wider range of beef products," Ian said.

"We know the US Government is under pressure to reduce salmonella in their food supply. They have been petitioned by consumer groups and have conducted surveys of their own product as a preliminary step.

"We are doing similar survey work here and producing data to ensure the DAWR is armed with the most up-to-date information about our *Salmonella* status once the new rules are announced."

The resistance movement

Project: Anti-microbial resistance survey

MLA is continuing to work closely with the Australian Government and research sector to monitor the levels of antibiotic use and antimicrobial resistance in the cattle industry, and encourage producers and feedlot operators to incorporate antimicrobial stewardship in their animal health programs.

"The United Nations convened a high-level meeting about antimicrobial resistance in September, which shows it remains a significant issue," Ian said.

"Compared to other countries, however, Australia's cattle industry doesn't have high levels of antibiotic-resistant bacteria, and we have the data to prove it."

The data was collected as part of an MLA project which analysed faecal samples collected from grassfed and grainfed cattle, plus cull dairy cows, at the point of slaughter.

The project concluded in 2014 and a similar project has just begun to assess microbial resistance in the sheep industry.

Inspecting the inspections

Project: Review of post-mortem inspection procedures

MLA is involved in a major review of post-mortem inspection procedures which are carried out by meat inspectors in Australian abattoirs.

"Due to improved animal health internationally, the value of



Using Australia's food safety record to grow markets: MLA's Master Chef Tarek Ibrahim being interviewed by Australian Ambassador Neil Hawkins for a local Egyptian TV station. Ambassador Hawkins speaks fluent Arabic and questioned Chef Tarek on the quality attributes of Australian beef and lamb and the integrity of Australian halal systems. They are pictured at an MLA market access program event held at the Ambassador's residence in Cairo. Among the guests were trade, government and foodservice stakeholders. The market access program involved a series of workshops with an Australian technical delegation to discuss changes to restrictive trade barriers related to shelf life and manufacturing beef.

traditional meat inspection procedures has declined," Ian said.

"We're now going through a process of asking 'What do we get out of inspection?' and 'Are there practices that can be eliminated because they don't contribute to the safety of our meat?'"

In the EU, for example, there has been wide adoption of visual-only inspection due to recognition that traditional inspection procedures may actually cause cross-contamination within and between carcasses.

Supply chain gain

Project: Animal health feedback from abattoirs to producers

MLA and Australian Pork Limited (APL) are working together on a Rural R&D for Profit project aimed at capturing, recording and utilising carcase and offal condemnation data.

"At the moment condemnation data is not routinely collected by processors, but doing so could potentially increase profitability for both producers and processors," Ian said.

"For example, if two-thirds of livers from Farm A are being condemned due to a problem and the producer could change their husbandry practices and solve that problem, then the whole supply chain would share the value of those livers."

Adding to the toolkit

Project: Shelf-life science

An MLA-funded project conducted by the Tasmanian Institute of Agriculture (TIA) has produced a tool that assesses the impact of any temperature changes on quality or shelf life.

The tool has been used to provide a free advisory service to processors and exporters, and researchers are now looking at how value gained from using the tool can be returned to the Australian industry.

Barriers to bacteria

Project: Minimising microbes

This project - part of ongoing work with the Tasmanian Institute of Agriculture (TIA) - involves the commercial trial of a treatment that effectively reduces bacteria, including *E. coli*, on carcasses while maintaining meat quality.

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



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Digital future

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

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Hear the latest from producers piloting MLA's Profitable Grazing Systems program.

22// Making gains

Find out what Sheep Genetics has delivered in the last decade and its impact on Australia's flock.

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Research reveals the roles for producers and processors in reducing the incidence of dark cutters.

30// P innovation

New tools are in the pipeline to help northern producers manage phosphorus.

Air time for agriculture

Producers may be having fun with drones, but what are the long-term practical applications for these 'new toys' in livestock enterprises? In this feature *Feedback* hears from producers, researchers and contractors about the world of possibilities opened up to red meat production with unmanned aerial vehicles.

Applications are already demonstrating measurable outcomes on-farm including labour efficiency, cost savings, animal welfare gains and improved safety practices.

More innovations are soon to be delivered. Here are five areas of research, with implications for all Australian producers:

- 1. Tracking:** Canada's Thompson Rivers University is developing a system to relay information from electronic ear tags to drones to locate and monitor cattle
- 2. Heat seeking:** In work similar to that of Canadian researchers, CSIRO is developing livestock tracking using heat-seeking technology
- 3. Pasture monitoring:** The University of New England in NSW will this year complete a three-year project fine-tuning biomass measurement with drones

- 4. Animal welfare:** Another Thompson Rivers University project uses drones to monitor the impact of animal husbandry procedures on livestock to assess responses to pain relief medication

- 5. Numbers game:** US lotfeeders are making quick work of counting cattle with new software (see separate story 'Counting cattle' on page 16).

Drone pilot Simon Wiggins believes the potential for Australian agriculture to benefit from computer-assisted flying technology is limitless.

However, industry and producers need to speak up with their ideas to fast-track more benefits.

Speaking at last year's MLA Beef Up Day at Kingaroy, Simon said progress in this area was "blinding".

"If agriculture can articulate its needs, it would see the same rapid development as seen in other applications," he said.

Simon made history in 2013 when he piloted the first drone used for commercial agricultural purposes in Australia at 'Sesbania Station', south of Richmond in Queensland.

He piloted a drone to poison the noxious weed prickly acacia, which now infests about 23 million ha in areas that were previously impenetrable.

Four years on, the range of agricultural applications for drones has exploded, matched by the rapid improvement in drone capability.

"Battery life and flight time, in particular, have really progressed," Simon said.

"When we started spraying prickly acacia, it would take 30 minutes to cover 100m on a watercourse.

"Now, we're doing a hectare every eight minutes."

Limitless possibilities



The horizon has expanded significantly to include potential developments in thermal imaging to control pest animals, using drones to count stock, identify, map and poison weeds and even to apply beneficial insects to crops.

"At Narrabri, we used a drone to apply beneficial insects to 24ha of cotton to control a tiny pest bug," Simon said.

"The job took us 4.5 hours to do with zero impact on the crop and the client reported a 95% drop in infestation and damage as a result."

Simon said he also used drones for

mapping and surveying.

"Recently, we had a client who wanted to replace bore drains and extend his artesian water system," he said.

"Using the drone, we matched data to a computer program to work out the elevation of large areas of the property, negating the need to survey."

He said the elevation model was accurate to within 5mm.



Simon Wiggins

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Play it safe

Business and management consultant Josh Keegan of Keegan Consulting Group warns producers to be mindful that legislation governing the use of drones is changing quickly.

"Before producers launch into buying or flying a drone, it's really important they understand their legal obligations for the particular class of drone they plan to operate," he said.

"Laws differ depending on the drone's weight class, and whether you are flying for fun or for economic gain.

"Anyone flying commercially requires an RPA

(remotely piloted aircraft) operator's certificate."

Josh said the most valuable information resource for producers who want to keep up to date is the CASA website at www.casa.gov.au/aircraft/landing-page/flying-drones-australia

The basic legal requirements for drone pilots are:

- only fly during daylight hours and keep the drone within sight
- don't fly higher than 120m above ground level
- keep the drone at least 30m away from people
- keep the drone at least 5.5km away from

controlled aerodromes

- don't fly over populous areas, such as beaches, sports grounds or parks
- don't fly over or near an area affecting public safety or where emergency operations are underway
- only fly one drone at a time
- don't fly the drone autonomously (with guidance by anything but a human) unless you have specific CASA approval to do so.

Josh said producers also needed to be mindful of Privacy Acts that ban drones taking images of people, and conveying personal information or data without consent.



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Josh goes into more detail about drones and livestock in a webinar for FutureBeef. Go to the FutureBeefAU YouTube channel and search the list of videos



The benefits of an eye in the sky



Jono Elphick (pictured) admits to using the farm as “a bit of an excuse” to buy an expensive toy in the form of a drone.

Snapshot

Jono Elphick, ‘Sunnyside’, 20km south-west of Inverell, NSW, owned by RN Krause & Co (Jono’s wife’s family)



Property:
2,834ha

Enterprise:
Breeding Angus-

Wagyu for feeder market and Wagyu stud

Livestock:
700 breeders

Pasture:
Perennial natives, lucerne, chicory, phalaris and digit grass

Soils:
Granite and basalt

Rainfall:
700mm

But after unpacking the DJI Phantom 4 model drone, Jono realised his ‘toy’ has some serious on-farm applications that could save him both time and money.

“The greatest advantage is the time-saving element of being able to quickly put up an ‘eye in the sky’ and gain an overall perspective of what’s happening on the farm,” Jono said.

Running cattle across undulating, granite country means there is considerable, and often rough, terrain for a small team to cover.

The team regularly check the 700 breeders, calves and additional weaned stock, water sources and fences. Using the drone has cut the time on these jobs from more than an hour to less than 10 minutes at far less cost.

“The other day we could hear cows bellowing from the house and instead of having to go and find the problem and then see to it, we put the drone up,” Jono said.

“In that case, within five minutes (operators can see what the drone sees in live time on an iPad), we could see that there was no real issue and could get on with the rest of the day as planned.”

Jono has used the drone to monitor pastures and crops during wet conditions, to prevent pugging of paddocks and to monitor pest invasions.

“We have had problems with feral pigs. Having the drone is a good tool for keeping tabs on them,” he said.

“Recently we had pigs in our oat crop, and with this season being so good, our oats were 1.5m high.

“There was no way conventional means would have spotted them in there or been able to remove them without doing a heap of damage.”

Jono also uses the drone to assess the density of bush regrowth by comparing photos over time.

In the future, he can see drones being used in grazing enterprises to monitor nutrient removal and dry matter more easily.



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Counting cattle

Canadian Adrian Moens, a representative for seed company AJM Seeds, can check the number of cattle in a client’s feedlot without walking in the pens and it only takes about four minutes to count 200 head.



His drone is set up to take photos of the pens, which are interpreted by a software program called CountCluster to tell him how many cattle are in the entire pen, or in a particular grid square.

Based in southern Alberta, Adrian originally used a drone to check corn and canola crops. Then a client asked him if it could be adapted to count cattle.

“The main reason cattle producers want to use drones is to reduce stress on their animals; particularly in summer when moving or disturbing cattle can lead to heat stress, or during the deep freeze, when there

is potential for them to slip and break a leg,” he said.

Adrian’s tips for using drones to monitor and count cattle are:

- fly as low as possible over the pens to maximise shot quality
- overexpose the image so the cattle stand out (black cattle tend to blend in with the manure)
- start with basic photos and transfer to your computer for analysis before moving on to specific software.

Adrian plans to increase his reliance on drones as supporting software is refined and improved.



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Check out Adrian’s drone videos at **YouTube** on the AJM Seeds channel

Fit for purpose

"Do your homework - identify the purpose you want the drone for and then select the best model to suit. Buying the wrong one can be both expensive and disappointing."



That's the advice from Brooke Sauer (pictured), who oversees the purchase of drones for farming in her role as Digital Agriculture Manager with McGregor Gourlay Agricultural Services.

Not all drones are created equal and there is considerable variation in features and performance between high-quality brands and cheap models, according to Brooke.

"In our service area across northern NSW and south-west Queensland, we're seeing more drones being used for an ever-increasing range of purposes, including live telemetry to enhance agronomy services, photography, assessing crop and pasture variability, mapping plant health, monitoring water flow for irrigation, checking water troughs and mustering livestock," she said.

"However, it is important to avoid getting caught up in the hype."

Choose wisely

Brooke said every brand has limitations, so producers need to consider carefully what capabilities they require, e.g. length of battery life and flight time, video quality, positioning ability for hovering, collision avoidance, telemetry ability and flight autonomy.

"There are plenty of inexpensive models of drones available both in stores and online, but I would not recommend shopping on price alone," she said.

"Cheaper drones are often more difficult to control, have a smaller range, don't have their own GPS, lack positioning ability (they can't hover) and are less stable in flight, particularly in windier weather."

After sales support

Brooke said hardware glitches were relatively common, so good after-sales support was a must.

"About 20% of the drones we sell are crashed and returned for repairs, which reinforces the advantage of buying a known brand from a reputable supplier," she said.

For those wanting to start with an entry level drone for photography and/or to move livestock, Brooke recommends a quadcopter under 2kg.

"This class of drone does not require an operator's certificate as long as it is flown on the producer's own land and within visual range," she said.

"It's easy to fly, and can stop and hover."

For involved tasks, such as mapping pastures, Brooke recommends a fixed-wing drone that can be mounted with a quality sensor and requires more training to fly.

Data drain

"Producers need to be mindful that if they are collecting data, quality sensors are more expensive and need to be supported by a

good internet package with high download speeds and plenty of data," Brooke said.

"Information generated from 40ha will use about 1 gigabyte to upload and then 250 megabytes to download, and it can take up to 24 hours for all of this to happen."

Once a drone model has been selected, Brooke said there was a world of apps available. Some of the most common are Litchi (photography, video), DroneDeploy (maps, measurement) and Pix 4d (drone mapping software).

"Within the confines of CASA regulations, the only limitation with the use of drones is our own imagination," Brooke said.

Depending on the drone selected, producers can expect to pay anywhere from \$900 for a basic model (supplied by a reputable manufacturer) that takes photographs, to \$3,500 for a drone with up to 28 minutes' flight time, collision avoidance, active tracking (can follow a moving object), live telemetry to an iPad and autonomous flight.

"Generally, more expensive drones are more stable, easier to fly and have longer range," she said.



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Drones for safety's sake

Kununurra-based helicopter pilot Matteo Salerno is excited about what drone technology could mean for safety in pastoral Australia.

"I love mustering (by helicopter), but I've lost friends (pilots). It is dangerous work and I think we have to embrace anything that makes the industry safer," he said.

The dangers are not just in the air. Matteo said lone workers doing bore runs on the ground in remote and unpredictable country were also at risk.

These safety concerns inspired Matteo's business, Drone Iview Australia, to launch an Australian first last year - drone-monitored bore runs.

"We can do it by either contracting to stations using our own drones and equipment, and providing managers with reports as required, or by helping an enterprise set up their own drone-monitoring system, including selecting the technology, applying for required permits and licences, teaching them how to use it and providing technical support," he said.

The company organises CASA approval to operate drones beyond the line of sight, which means the range of their equipment is only limited by battery life and telemetry (unless satellite telemetry is available).

After the wet season, Matteo (pictured below left with employee Jeremy Sofonia) will start a proof-of-concept project, funded by the Kimberley Pilbara Cattlemen's Association, to further establish how drones can be applied in the pastoral industry.

"I would expect that within the next two years we will be using larger, fuel-powered drones for mustering, particularly in flat, open country," he said.

"They aren't practical to use everywhere, but it is hard to ignore the substantial safety and cost benefits they can deliver.

"If Australia is an early adopter of this technology, it will make our meat industries more competitive internationally."



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Data for



Darren and Melanie Hamblin with their children Sarah, 15, Will, 7, Alice, 10 and Lucy, 13

For Darren Hamblin, data is king. He collects and interprets data at a level that sets the former engineer and mining investor apart from most commercial beef producers.

"We would collect more data than most studs but information, particularly pedigree and carcass data, is such a powerful tool," he said.

"We've been recording stock data intensively since 1997 and I really appreciate now how much value it brings to our operation.

"I trust my decision making. It's just a no-brainer - I wouldn't operate without it."

Darren and his wife, Melanie, run five properties in the Mackay region and at Middlemount in Queensland. In the past 16 years they have built up an intensely recorded Wagyu full-blood, F2-pure-bred and F1 herd using Shorthorn females as a base.

The aim is to turn off high-value Wagyu and Wagyu-cross steers at 340kg live weight (14-18 months) to be finished on feed for 450 days.

The ultimate goal was to refine breeding to custom produce carcasses that satisfied market specifications every time, Darren said.

Darren admits data recording takes resources and time, however, over the years he has



custom-designed cattle



Snapshot

Darren and Melanie Hamblin, Mackay and Middelmount regions of Queensland



Property:
18,623ha across five properties

Enterprise:
Wagyu-cross beef production

Livestock:

3,000 breeders (400 Shorthorn cross, remainder F1 or purebred Wagyu)

Pasture:

Rhodes and pangola grasses

Soils:

Fertile creek flats to pastured undulating shaded ridges

Rainfall:
1,500mm

researched technology and increased each property's recording capability so data is collected, stored and shared with relative ease.

"What information you should be collecting is determined by identifying your profit drivers and what trait or other information influences them," he said.

The information is primarily used to inform breeding and selection decisions as well as to identify which animals meet market specifications.

"I worked with Practical Systems to adapt their web-based stock recording program, Agrisphere, to our needs," he said.

The system

Equipment: Each of the five properties has the same set up in the cattle yards, with live entry recording using built-in RFID tag readers.

Staff: One family is employed on each property, as well as an overall remote data manager.

Data: Every time an animal enters the yards, its weight and treatments are recorded (including chemicals and batch numbers). All joining details and pedigrees

are recorded, including artificial insemination, embryo transfer and *in vitro* fertilisation, and all resulting pregnancy and calving details. Sale and carcass details, including the full AUS-MEAT assessment and export requirement assessments, are also collected.

Back up: All data is shared between properties on a web-based tool, encouraging interaction between staff and reducing the risk of data loss due to hardware failure.

Darren said while the staff numbers were high compared to similar-sized enterprises, their intense breeding program - which includes blanket AI programs with insemination on natural heat and no back-up bulls - means it is often "all hands on deck".

"We have a split calving with about 60% of the herd joined in December/January and the remainder in June/July," Darren said.

"Managers record new calves and their pedigrees daily and any that are in doubt are DNA-tested to confirm parentage."

Darren said his top data recording priorities for his herd were parentage and carcass data, followed by growth rates.

"A combination of this information enables me to select which animals are best suited to which breeding program in order to maximise our genetic gain and profitability," he said.

"If we have cows with inferior carcass attributes but they're still fertile and good mothers, it makes sense to use them as recipients in our ET (embryo transfer) program, where they can produce a calf of higher value.

"My recommendation to producers would be that if you can do nothing else, at least capture pedigree and carcass data."

The next focus for the enterprise is using data to increase the number of polled Wagyu.

As part of a new venture with Tasmania's Hammond family and Scott de Bruin, of South Australia, the Hamblins have implanted about 1,000 poll Wagyu embryos and are rearing 190 poll Wagyu calves with good marbling and genetics that will be adapted to northern Australia.



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Precision agriculture for pastures

Self-confessed data junkie Mark Branson, of Branson Farms, is applying technologies he refined when growing crops to pasture improvement.

The mixed farmer grows wheat, barley, faba beans and canola and runs a self-replacing, fine wool Merino flock.

At MLA's Red Meat Industry Digital Strategy Forum in Brisbane in 2016, he outlined how he is taking the soil diagnostic and yield assessment tools more commonly used by grain growers and applying them to his pasture management.

"My father sowed the seeds for this concept more than 35 years ago and taught me that soil type, fertility and yield can vary significantly in short distances," Mark (pictured right) said.

"Just because it's in the same paddock, doesn't mean it's the same throughout, and there is no point wasting money planting or applying something if it's not going to do any good."

Before computerised analysis tools, Mark made assessments with soil tests and by 'eye' and used that knowledge, combined with yield data from previous crops, to plan his sowing program.

Today, Mark uses the digital program SMS Advanced, which enables him to store multiple levels of information on paddocks, including maps of soil types, nutrient levels and pH, and to divide those paddocks into management zones that can be treated specifically to optimise performance.

That information is then transferred from the home computer to the tractor to guide seed and nutrient applications via GPS.

Mark said that by applying this mapping and analysis tool to cropping - by planting suitable varieties and applying correct nutrients - he has captured an extra \$60/ha.

"This is partly a result of being able to increase production, but is mostly derived from savings on nutrient inputs (about \$40/ha)," he said.

"Interestingly, the drop off of nutrient rates has also led to a slight increase in yields, due to the improvement of soil structure and the placement of nutrients where plants need them."

Soil tests at Branson Farms are conducted annually on a rotational basis, so paddocks are routinely assessed about once every 10 years.

The property has a strong fertiliser history with phosphorus applied at maintenance levels only and legumes are used to improve soil nitrogen.

"Our soil types are mosaic and they can change very quickly from one type to another," he said.

"I believe we increase our pasture growth by about a third by planting optimally, e.g. putting sub-clovers in acidic soils and medics on alkaline.

"We also waste far less seed."

Maximising the benefit

Mark also believes pH mapping matched to GPS - undertaken in his case by a consultant - can have a considerable impact on profitability. He said pH maps enabled him to vary the rate of lime applied across paddocks, according to the degrees of acidity.

"They take some work to set up, but once you've got pH maps they are a powerful management and decision tool," he said.

"Some of our red soils are becoming acidic so we need to be able to pinpoint those areas to improve their productivity and to control our liming and spreading costs."

Sodic soils (high sodium soils) are treated with gypsum applied generally at high rates (5t/ha) determined by slump soil tests, which essentially measure soil stability when soil gets wet.

"We use the soil colour and texture, as well as this test, to see if the soil's structure could be improved with the application of gypsum," he said.

"In the past, we've found some areas have needed treatments of both gypsum and lime."

Mark said they were trying to keep on top of the acid issue in red 'soapy' soils and areas requiring treatment were decreasing over time.



Snapshot

Mark Branson,
Branson Farms,
Stockport, 80km
north of Adelaide,
South Australia



Property:
1,200ha

Enterprise:
80% cropping
(wheat, barley,
canola, faba beans);

20% sheep,
self-replacing fine
wool flock

Livestock:
1,000 ewes

Pasture:
Annual sub-clovers,
medics and
ryegrass

Soils:
Red, black,
self-mulching,
cracking clay

Rainfall:
460-500mm,
winter dominant

How to make the most of digital technologies in pastures

According to Mark, the greatest value comes from:

- understanding the problem you are trying to fix
- having good data on paddock variability
- only using technology if it helps manage a challenge.



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Watch Mark's presentation from the
MLA Red Meat Industry Digital
Strategy Forum at:
www.mla.com.au/digitalforum

Management

Putting it into practice

MLA's Profitable Grazing Systems (PGS) pilot has finished, but the benefits continue. **Feedback** caught up with the Hazel, Croft and Bassingthwaight families to hear about their progress after participating in the pilot.

Stuart and Anja Croft, south-west Victoria and NSW Western Division

Stuart said he and Anja (pictured with their children Hannah and Harry) didn't have a specific goal going into the PGS pilot, but they knew they needed to assess their sheep, wool and cattle business.

What's your top learning so far?

The identification of loss drivers: we discovered our cattle enterprise is not economically viable because it's not the main focus of the business, yet still requires infrastructure and supplementary feeding.

We also submitted our economic data to the Farm Monitor Project (delivered by Agriculture Victoria) to benchmark against other farms. It showed where we did well and where we fell behind. For example, our stocking rate was low (compared to the rest of the district) and our labour costs were high.

What changes have you made that will have a long-term impact on your business?

We reduced our employed labour and use a contractor for fencing and other one-off large maintenance jobs. We're also experimenting with low-labour input supplementary feeding and we've joined more ewes to increase our stocking rate.

What are your tips or tools from PGS?

Working with PGS and Farm Monitor was an eye opener because of the depth of information available and the value of benchmarking. As a result, I'd recommend:

→ working with producers/ag

groups to discover what works in your region

→ assessing other producers' successes and failures to help improve your business

→ using benchmarking data to focus on cash flow and efficiencies

→ looking at the data and then making decisions that fit with your goals.

Clyde, Janet, Robert and Lorin Hazel, Kapunda, SA

The Hazel family were keen to develop practical skills for pasture management in their sheep enterprise. Robert said the PGS pilot helped them assess their grazing systems, and as a result implement rotational strip grazing to promote optimum pasture growth.

What's your top learning so far?

The five-day rotational strip grazing strategies we implemented work well for our enterprise in winter. When we looked into strip grazing stubble in the summer, the costs – for example, more watering points required – outweighed the benefits.

What changes have you made that will have a long-term impact on your business?

By moving to strip grazing and grazing pasture at optimum growth stages, we have been able to reduce our winter grazing area, while producing the same kilograms of meat and wool.

What are your favourite tips or tools from PGS?

In terms of getting grazing right, I know it works best if I:

→ use temporary electric fencing to evenly graze paddocks



Image courtesy Stacey Schack

→ move mobs every five days and leave higher levels of dry matter after grazing to speed up pasture recovery and increase growth.

Sam and Cassie Bassingthwaight, Jandowae and Dalby, Queensland

Sam and Cassie participated in the PGS pilot to learn the best ways to increase the carrying capacity of their property and improve sustainability.

What's your top learning so far?

Learning how to identify the growing season in order to spell pastures has been our top priority.

What changes have you made that will have a long-term impact on your business?

We're currently fencing off land and adding watering points to regenerate pastures so we can increase our breeder herd by the end of 2017. To date, we've almost completed one paddock. When that's finished, we'll start on a second paddock.

The winter rain and spring looked promising, so we planted pastures. Unfortunately the heatwave cost us approximately 60% of the legumes we planted. We need to address the damage and work out how to spell paddocks and manage our fodder until we get rain.

At the moment we're trialling supplements and pasture management systems to track weight gain in the herd. We're also using dung sampling to pinpoint health issues.

What are your favourite tips or tools from PGS?

The two day BusinessEDGE course, included as part of the pilot, was a lot to take in, but the principles we learnt are helping us track costs across our property and in specific paddocks as we make improvements.

Overall the pilot was great for building awareness across the entire business. It brought home where the weaknesses are, but it will take time to figure out the right system for us.



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Genetics

Sheep genetics: from strength to strength

Sheep Genetics was launched in November 2005 as a joint project between MLA and Australian Wool Innovation.

The project created one national genetic evaluation system, in which all breeding values are calculated using the same methodology and language.

Sheep Genetics, solely managed by MLA since late 2016, now gives breeders access to:

LAMBPLAN for prime lamb breeds

MERINOSELECT for the Merino industry

DOHNE MERINO for Dohne Merino breeders

KIDPLAN for the goat industry.

Breeders can use the breeding values generated by the programs to make valid comparisons between seedstock animals.



www.sheepgenetics.org.au

THEN

information available a decade ago:

- different methodologies and languages for evaluating prime lamb breeds and Merinos
 - prime lamb genetic evaluation via LAMB8
 - genetic evaluation via Merino Genetic Services and several smaller evaluations
- across-breed terminal sire evaluation
- within-breed analyses for maternal breeds
- Estimated Breeding Values (EBVs) for weights at different ages, eye muscle depth, fat, worm egg count, number of lambs weaned, fleece traits for Merinos, plus lambing ease for meat breeds.



NOW

information available today:

- single methodology and language (Australian Sheep Breeding Values - ASBVs) for evaluating sheep breeds
 - LAMBPLAN
 - MERINOSELECT
 - DOHNE MERINO
- across-breed terminal and maternal sire evaluation
- new eating quality (IMF - intramuscular fat and SF5 - shearforce) and carcass yield (LMY - lean meat yield), plus breech traits including wrinkle
- improved reproduction data collection and traits analysis
- more visual traits are available for Merinos including wool colour, fleece rot, wool character and staple weathering, and the ability to use repeated adult fleece measurements
- traits can be recorded and used in more age stages for Merinos, e.g. can collect wool traits in post-weaning age stage
- commercially available SNP tests to improve ASBVs for Poll Dorset, White Suffolk, Border Leicester and Merino
- first stage of single-step analysis using DNA information with pedigree information and animal measurements for more accurate ASBVs
- Australian and New Zealand data analysed together for several breeds used in genetic exchanges between countries, i.e. Coopworths, Corriedales and Poll Dorsets.



NEXT

information available in the future:

- more accurate breeding values for reproductive traits that have low heritability, but are important profit drivers (increased accuracy to flow from more data, including pregnancy scan information)
- more ASBVs for reproductive traits - current 'number of lambs weaned' trait to be split into its components of 'fertility', 'litter size' and 'lamb survival'
- more accurate ASBVs based on increased use of genomic technologies
- more accurate eating quality ASBVs based on processor feedback from objective carcass measurement technology
- full single-step analysis, which will generate a full set of ASBVs from a single blood test at marking.





Full speed ahead

The Michael family from Leahcim Poll Merino and White Suffolk studs were early adopters of both genetic and genomic technologies and are constantly pushing the boundaries of the technologies' capabilities.

In the past three years, Andrew Michael and his family have dramatically sped up the process of genetic gain in their stud sheep using DNA testing and juvenile *in vitro* embryo transfer (JIVET).

"Without ASBVs, genomics and the MLA Resource Flock, there is no way we could achieve what we're doing now," Andrew said.

Andrew has been collecting flock data for his own selection purposes and to generate Australian Sheep Breeding Values (ASBVs) for more than 30 years.

In 2007, he began using JIVET to speed up the rate of genetic gain in his Poll Merinos.

The JIVET process involves identifying superior breeding stock at an early age, using advanced embryo technology to collect eggs from ewe lambs when they are six to eight weeks old, fertilising eggs in a test tube with semen from the most advanced performance rams and transferring them to surrogate mothers.

The result is a new drop of high-performance lambs in six-and-a-half months, rather than two years using traditional breeding methods.

"When we started, we were just using pedigrees to determine superior stock and really guessing the rest. Once full DNA

testing became available, the potential took off," Andrew said.

The Michaels' initial program of genomics-based JIVET was in 2013.

As well as speeding up gain in traits such as growth, fat, muscling and wool production, DNA testing has allowed them to select for hard-to-measure eating quality traits.

It means the Michaels now have the consumer firmly in mind.

"Our selection pressure for eating quality in both Merinos and White Suffolks is enormous - it has become a very high priority for us," Andrew said.

As well as achieving breeding objectives, Andrew said the JIVET process helps identify negative breeding outcomes much earlier.

"We undertook a JIVET program that included three outside sires that had high fleece weights, but had skins that were different to ours," he said.

"In three generations with JIVET - 20 months - we couldn't get the skin and follicle structure that was acceptable to us and our clients, with no sires being retained for future breeding purposes."

It's not just about meat and wool; benefits have also flowed in the form of higher skin prices and improved animal welfare.

"We have increased our measuring and selecting for follicle density, which doesn't have an ASBV but which I believe is the best way to increase fleece weight without increasing skin wrinkle," Andrew said.

"Because of this work - plus past work to improve skin in both Merinos and White Suffolks - the skin component of our sheep at slaughter is much more valuable.

"Last year we put a couple of thousand lambs through our feedlot and sold them over the hooks, averaging about \$12 per skin on the British breeds and \$22 for the Merino skins.

"As well as increasing skin value, genetic selection has allowed us to improve animal welfare outcomes and reduce chemical use on our farm: we haven't mulesed since 2004 and we haven't backlined for bodystrike for 30 years."

Snapshot

Andrew and Rosemary Michael and their sons Luke, Stewart and Alistair, 'Leahcim' Snowtown, South Australia



Property:
2,500ha at Snowtown,
6,300ha at Burra and
700ha at Willooka

Enterprise:
Poll Merino and White
Suffolk studs, commercial
wool growing

Livestock:
2,200 Poll Merino stud
ewes, 800 White Suffolk
stud ewes and 350
commercial Poll Merino
ewes

Soil:
Ranging from deep sands
to rolling undulations

Rainfall:
200-500mm



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Genetics

Chasing the traits for production

The Mitchell family of Mintaro, South Australia, are commercial producers reaping the rewards of 20 years of ram selection based on Estimated Breeding Values (EBVs) for a wide range of traits.

Snapshot

The Mitchell family: John and Pam, Andrew and Kimberley, David and Peggy. 'Chelwood' Mintaro, Clare Valley, South Australia



Property: 2,600ha over several properties operated by Chelwood Farming

Enterprise: Dual-purpose Merinos, cropping and wine grapes

Livestock: 6,000 sheep, including 3,200 Merino ewes

Pasture: Mix of improved pastures and native grasses, plus stubbles for summer grazing

Soil: Heavy red-brown clay

Rainfall: 600mm at Chelwood and about 450mm on the breeding block 15km east

In 1996, the Mitchell family began buying rams from a stud that was an early adopter of objective measurement.

"That was our introduction to Australian Sheep Breeding Values (ASBVs), in the form of EBVs," Andrew Mitchell (pictured right) said.

"I have a pretty good understanding of maths, so using ASBVs just makes sense to me.

"Those were good sheep and reduced our micron from 25 to 20, but they had a lot of skin and were slow maturing. We wanted a plainer sheep with early maturity, so in 2004 we started buying Poll Merino rams from a stud with a long history of genetic selection for the dual-purpose traits we wanted."

The results

The biggest gains over 20 years have been in growth rate, carcase yield, hardiness, ease of management, and wool fibre length and strength.

Andrew said the most noticeable change was lamb growth rates.

"It previously took us 14 months to get lambs up to slaughter weight - now we are down to as short as six months," he said.

Since 2010, the selection focus has been on eye muscle depth (EMD) and fat, with the goals of improving carcase yield in good times and hardiness when feed is scarce.

"Carcase yield has increased since



2010, with the use of the high EMD sires," Andrew said.

"We were originally quoted 40% yield when buyers came to buy the lambs. Since going over the hooks in the past five years, the yield has steadily increased to 46% of live weight straight out of the paddock.

"We recently competed in the Booborowie Lamb Competition and one of our Merinos placed fourth-highest for weight gain - behind two crossbreds and another Merino - and had a 50% dressing percentage."

Andrew said selecting for a plainer-bodied animal had also improved animal welfare outcomes and simplified flock management.

"We don't have to jet sheep for flystrike and we rarely have to pull lambs. Any lamb needing help during delivery is tagged, as is the ewe, and both are culled," he said.

New era for sheep genetics

Australia's breeding evaluation service, MLA's Sheep Genetics, looks set to remain at the forefront of livestock genetics.

Under a new five-year business plan endorsed in September last year, MLA assumed full management of Sheep Genetics.

While stud breeders continue to fund business operations through their use of the evaluation services, research and development is now funded by MLA, with AWI contributing on an individual project basis.

Mick Crowley, MLA's General Manager Producer Consultation and Adoption, said the new management structure enabled Sheep Genetics to remain at the forefront of livestock genetics and expand its capabilities.

"Genetic improvement in livestock is critical to future growth and productivity gains across the industry," Mick said.

"The genetic evaluation services provided by Sheep Genetics underpin breeding decisions that drive genetic gain in seedstock flocks, which then flow through to commercial flocks."

Mick said the new business plan would facilitate collaboration between Sheep Genetics, other organisations and private companies to develop new product offerings.



Andrew Mitchell

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Mick Crowley

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Management

Better tools for condition scoring

Northern beef producers now have access to more accurate and informative guidelines to help body condition score (BCS) cattle.

Jo Miller, Grazing Best Management Practice Coordinator for the Burdekin region with the Queensland Department of Agriculture and Fisheries, worked with fellow researchers Dave Smith, Mick Sullivan and Geoffry Fordyce to develop a new set of standard photographs which more accurately demonstrate BCS in tropical cattle breeds.

"The importance of body condition to breeder production and animal welfare is well known. The five-point BCS system is well regarded by industry and was used in two large research projects, the Beef CRC and CashCow (both MLA funded)," Jo said.

"However, the photo standards previously available to industry were inconsistent across breeds, which meant they weren't as useful as they could have been."

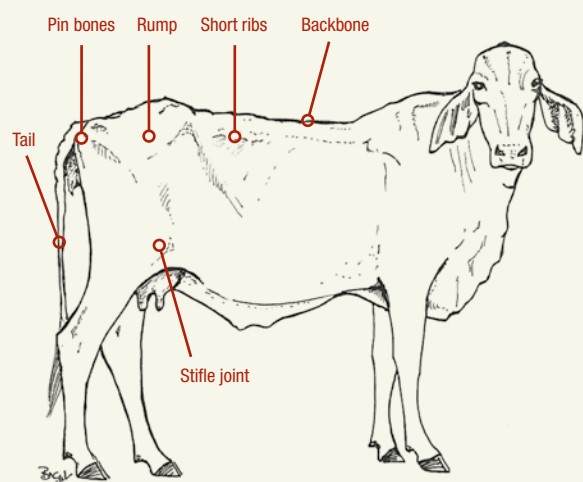
Condition scoring is a valuable tool for assessing animals and planning management. Poor body condition is a primary risk factor for cow performance, especially if pregnant while lactating.

Jo said another benefit of more consistent guidelines is improving the transfer of information between industry groups.

To create the two new sets of photo standards (Brahmans and *Bos indicus* content), Jo photographed a range of animals of similar breeding lines but in varying condition. Identifying features, such as brands, were then removed from the photographs.

BCS can be assessed by looking at key areas on the animal (Figure 1) in conjunction with the BSC photo standards. This information can then be used to guide management decisions.

Figure 1 Location of key assessment sites (Blackwood *et al* 2013)



A guide to BCS
1 - poor
2 - backward
3 - moderate
4 - forward
5 - fat



Check out the new photo standards at: www.futurebeef.com.au and search 'body condition score for beef cattle'



Watch a video demonstrating how BCS underpins one northern beef enterprise www.futurebeef.com.au and search 'body condition scoring key to breeding'

Compliance

Discoveries to reduce

Dark cutting meat - meat with a high pH - costs the Australian beef industry an estimated \$55 million a year. With funding from MLA, two young scientists have completed research into the on-farm and pre-slaughter factors affecting dark cutting meat. Both were awarded prizes for their work at the MLA-sponsored Australian Society of Animal Production Conference in 2016.

On-farm factors

Research shows pasture magnesium content, the presence of pasture mycotoxins, supplementary feeding and the source of water can significantly affect the incidence of dark cutting.

Rates of dark cutting for grassfed cattle in southern Australia range from 7% to 14% a year, with the highest incidence at the shoulders of the pasture-growing season when feed quality is poor. However, spikes in dark cutting have also occurred during autumn and early winter when lower quality feed is on offer.

Dr Kate Loudon from Western Australia's Murdoch University (pictured below) carried out an MLA-funded trial in 2015 to investigate what additional on-farm impacts could be contributing to the unseasonal peaks. A range of animal, management, feed and environmental factors were evaluated in more than 3,000 head of cattle processed at JBS Longford, Tasmania.

Results showed factors that could have an effect included:

Magnesium: When the concentration of magnesium in the pasture increased from 0.18% to 0.28%, the incidence of dark cutting decreased by 13%.

Inadequate daily intake of magnesium results in a heightened stress response and increased muscle contraction. The importance of supplementing magnesium to prevent grass tetany in cows during winter is well understood, but Kate believes the effect of low

magnesium on growing and finishing stock may be underestimated.

"It is typically occurring at an insidious subclinical level. Producers won't see classical muscle contraction signs when stock experience heightened stress response and reduced feed intake," she said.

Mycotoxins: Increasing concentration of mycotoxins in pasture is associated with a higher incidence of dark cutting.

"Mycotoxins are produced by endophytes, a fungus that forms a symbiotic relationship with the plant, improving persistence and providing pest and disease protection. But some mycotoxins, particularly those found in older varieties of perennial ryegrass, can impact animal health," Kate said.

Supplementary feeding: Cattle fed hay or silage in the lead up to slaughter were less likely to be dark cutting, despite the feed being of lower quality than the pasture on offer. This is thought to be due to the supplementary feed diluting the intake of pasture mycotoxins, and providing effective fibre that increases magnesium absorption and improves gut fill during transport. The regular interactions with people and machinery provided by supplementary feeding may also reduce the stress response in the foreign environment of transport and lairage.

Water sources: Cattle drinking water from a trough were found to achieve better grading results than those sourcing water from a dam. Trough water, even pumped directly from a fenced-off dam, is cleaner and more palatable.

"Water and forage intake are closely related. Cattle drink more from cleaner water sources, which, in turn, greatly increases their grazing time and weight gain," Kate said.

What can producers do?

The results indicate that producers should test their pastures to monitor quality and mineral content and supplement with magnesium if required.

Further MLA-supported research will investigate practical, economic solutions for producers of grassfed beef to reduce the effect of pasture mycotoxins and identify the best method of short-term magnesium supplementation before slaughter.



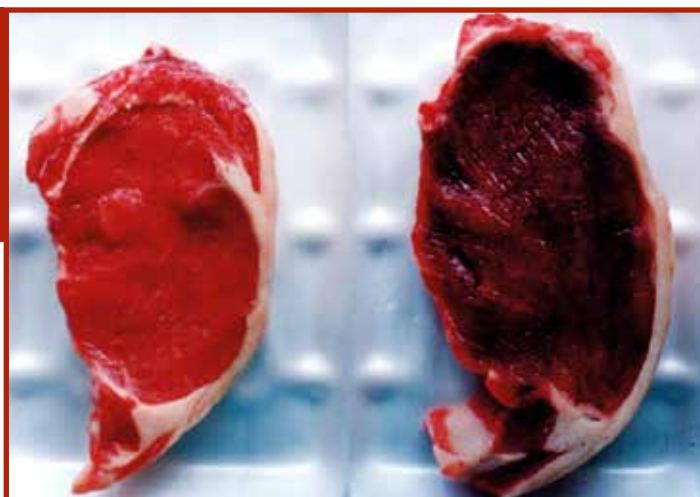
Dr Kate Loudon

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dark cutting meat

What is dark cutting?

'Dark cutting' results from low muscle sugar (glycogen) at the time of slaughter, causing the meat to have a high ultimate pH. High pH meat (above 5.71) is associated with eating quality inconsistencies and fails to meet MSA minimum requirements. A dark meat colour (such as that pictured on the far right, in comparison with meat considered to have ideal colour) is often linked with high pH.



At the abattoir

Research conducted by Adelaide University PhD student Farrah Preston (pictured below) investigated whether the incidence of dark cutting is affected by abattoir management.

"Earlier research has focused on on-farm factors affecting dark cutting. We wanted to see what might be having an effect during unloading at the abattoir and in lairage as, if something does happen to increase the cattle's stress levels, it is only a short time before slaughter and not sufficient for cattle to recover," Farrah said.

A broad survey of abattoir practices was undertaken and pre-slaughter washing was identified as a possible contributor to high pH levels. Pre-slaughter washing is standard practice and a legislative requirement imposed by the Department of Agriculture and Water Resources and some importing countries.

Research was carried out at Teys Australia, Naracoorte, SA, in 2015 when nearly 3,000 grassfed and grain-finished cattle were monitored during unloading and lairage. During this time they may

be washed using three different treatments (an in-floor sprinkler, high-pressure hoses and a targeted belly wash).

The results indicated that each pre-slaughter wash with the in-floor sprinkler increased dark cutting by 2%.

Farrah said although the results showed the high-pressure hose wash did not significantly affect the incidence of dark cutting, it did affect animal behaviour with an increase in the number of cattle mounting, which has been linked to stress.

"We also found that if the animals were jumping as they came off the loading ramp at the abattoir, this increased the incidence of high pH," she said.

Industry recommendations

As a result of the project, Teys Australia has installed a new unloading ramp at their Naracoorte complex and is reviewing their washing practices.

Further research will look at developing management recommendations for abattoirs to limit contamination and maximise meat quality.

"It will focus on what management strategies processors can put in place, such as a smaller number of washes, or no washes, and whether pre-slaughter washing is actually effective in reducing carcass contamination," Farrah said.

"At the very least, pre-slaughter hide washing should be limited to only the dirtiest mobs for the minimum time necessary to reduce visible contamination to an acceptable level."

It is also important for producers to ensure their cattle are clean and on a rising plane of nutrition before slaughter.



Farrah Preston

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Business management

Get the EDGE in business

MLA's two-day business workshop, BusinessEDGE, has headed south.

Building on six years of success in northern Australia, where the course has helped more than 600 producers from south-east Queensland to the Kimberley improve their financial skills, BusinessEDGE has now been adapted to southern grazing enterprises.

Agribusiness consultant Dr Phil Holmes, who trained the course leaders in South Australia, NSW, Victoria and Tasmania, said although the core fundamentals of the workshop remained the same, the southern version catered for producers operating multiple enterprises.

"For people who run, say, sheep, beef and cropping, there are some added complexities - but what drives a business remains the same," he said.

Key points and skills producers should gain from the workshop include:

- knowing that every business decision needs to be evidence-based
- learning how to set up management accounts and use them to understand true business performance
- learning how to use spreadsheet tools to work out where best to spend surplus capital to improve the business
- using benchmarking to identify strengths and weaknesses
- improving knowledge and confidence, particularly in dealing with banks and financial institutions.

There is no assumed knowledge required to take part in the workshop, however Phil said producers who got the most from it usually had some of their own bookwork to hand (e.g. a BAS to complete); a desire to improve profitability; or a particular goal, for example, expansion, retirement or succession planning.

South Australian BusinessEDGE trainer Simon Vogt of Rural Directions said the workshop had a great "provisioning for the future" message.

"I'd love to see every 25 to 35-year-old producer or manager do this course," he said.

"The potential for wealth creation over a 30-year horizon is quite exciting."

Adrian Kennelly of RM Consulting Group will run the Victorian and Tasmanian workshops. He encourages producers to participate to help gain a better understanding of their business to achieve their goals.

"Not everyone is totally profit focused," he said.

"Every workshop is tailored to suit the participants. For some, it's about finding the best work/lifestyle balance."

John Francis of Holmes Sackett Consulting will host the NSW BusinessEDGE courses.

Producers interested in attending a course, or attracting a workshop to their region, should contact their state coordinator:

South Australia: Simon Vogt
T: 0407 959 836
E: svogt@ruraldirections.com

Simon plans to run courses in the following locations this year:

- Meningie - 4-5 April
- Strathalbyn - 5-6 July
- Millicent - 13-14 September
- Clare - 20-21 September.

NSW: John Francis
T: 0427 259 005
E: john@holmessackett.com.au

Victoria/Tasmania: Adrian Kennelly
T: 0427 679 041
E: adriank@rmcgc.com.au

BusinessEDGE workshops will be held in various locations in northern Australia this year. Upcoming events include:

- 21-22 March - Georgetown, Queensland
- 13-14 June - Mackay, Queensland
- 20-21 June - Darwin, Northern Territory

On the right course

Western District prime lamb producer John Gardner (pictured right) considered himself pretty good with numbers, particularly given his background in construction.

However, after completing a BusinessEDGE workshop in Naracoorte, SA, last year he realised there was more information available to help him run his grazing and cropping business more profitably.

Building skills for life

Wade Timms (pictured right) represents a new generation of professional managers who want to understand their employer's business - from the back gate to the boardroom.

Following the completion of two BusinessEDGE workshops, one northern and one southern, Wade believes his improved accounting and business diagnostic skills are not only invaluable in the workplace, but also vital for building personal wealth for his family's future.



To register your interest contact **Ian McLean**, Bush Agribusiness
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Why did you sign up for the course?

I had some time to think following a severe injury and decided I needed a better understanding of the business/financial side of the farm. My background in construction management meant I had a grasp of some things, but there was plenty of room for refinement, especially with identifying the key drivers of profitability.

What aspect of the workshop appealed to you most?

It was the fact that it took us back to basics. We became more comfortable with the language of finance and learnt to identify which numbers to extract from financial reports that are meaningful for farm businesses. The workshop showed me how to work out KPIs (key performance indicators) relative to our business and how to manage capital expenditure with short and long-term business goals in mind.

Did you make any immediate changes to your business?

I was just taking over the farm books at the time, so it helped me refine our financial systems and program. I also found the return-on-capital investment spreadsheet we were given and taught to use really helpful and I still use it.

**Snapshot**

John Gardner, 'South Mokanger',
Cavendish, 20km
north of Hamilton,
Victoria



Property:
1,822ha

Enterprise:
Prime lamb
production and
cropping (canola,
wheat, barley)

Livestock:

10,000 self-replacing maternal ewe flock

Pasture:

Ryegrass-clover and phalaris-clover mixes with lucerne and rape summer crops

Soil:

Sandy loam and basalt

Rainfall:
650mm

Are you planning any changes in the long-term?

I would like to refine what we're doing and get a clearer picture of our variable costs to help improve our profit margin. I'd also like to set clear goals for our business to allow for a smooth generational transition.

What was the greatest benefit of the workshop to you?

It definitely boosted my confidence. I feel like I understand the numbers now and can use them to make better decisions to improve the business. It also identified a clear path for our farm business to transition through generational change.



John Gardner

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Why did you sign up for the course?

About five years ago I realised there was more to agriculture than being able to ride a bike and having good working dogs. I wanted to become a professional at what I did and learn how to run a business well enough to consistently benchmark in the top 20% of businesses that are the most profitable.

What aspect of the workshop appealed to you most?

I think the clarity it provided about what the profit drivers of the business are and the fact that EBIT (earnings before interest and tax) is the engine room that drives the business. It's also great to spend two days with like-minded people. It provides an opportunity to network. I now have mentors who are seriously good at what they do.

How have you applied what you have learnt?

I just started a new job at 'Conmurra Station' so I'm still finding my feet. However, in our personal lives, my wife Mary and I have set our own goals. We're applying the same principles to self-provisioning for our wealth creation. It's all about timing of investment, assessing future investments and being able to calculate return on equity and assets to achieve sustainable asset

Snapshot

Wade Timms,
property manager,
'Conmurra Station',
40km south-east of
Kingston, South
Australia



Property:
3,600ha

Enterprise:

Fine wool Merinos
and beef production

Livestock:

40,000 DSE

Pasture:

Phalaris, clovers,
annual ryegrass and
lucerne

Soil:

Sandy loam, shallow
grey/black water
logging

Rainfall: 600mm



growth. Just like agriculture, our strategy is about time in the market - not price chasing.

What advice would you give other producers/managers?

The workshop is a great investment in yourself. These days, 30% of managers' time is spent in the office researching and understanding how a business operates, so they can achieve the best returns on assets. If you decide to start benchmarking your business's performance, do your research on who provides the benchmarking and advice. Depth and

strength of comparison data is really important.

What was the greatest benefit of the workshop to you?


It was a great confidence boost. I now see myself as a professional working in agriculture. I am going to focus on the things in my control and I no longer have the urge to act on gut feel.



Wade Timms

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Nutrition



MLA-funded phosphorus (P) research projects for northern Australia have uncovered new information to help improve breeder management in phosphorus deficient areas. Here, we look at some of the recent breakthroughs resulting from that research investment.

A more mature approach

Dr Rob Dixon, senior researcher at the University of Queensland (UQ) and member of the Queensland Alliance for Agriculture and Food Innovation research institute, said the good news is mature breeders are more resilient to short-term P deficiency than previously thought.

"Unlike growing cattle, mature breeders can mobilise their own body reserves to reduce the negative effects of short-term P deficiencies," he said.

This is in contrast to most previous P nutrition research findings, which have been based on growing cattle.

"It was always expected that the responses of growing cattle would represent those of other stock classes, however this project has shown that is not the case," Rob said.

"We found breeders can, to some extent, use body reserves of P to meet a short-term P deficiency in the diet, just as they can use body reserves of fat to get through a metabolisable energy shortage during the dry season."

The research team found mature Droughtmaster cows fed a high-P diet during pregnancy, and with good body

condition and P status at calving, could mostly maintain milk production and calf growth for at least three months on P deficient diets.

Don't break the bank

However, Rob said producers needed to be mindful that using up an animal's P reserves comes at a cost.

"Our results showed producers could expect calves at three months old to be slightly lighter (10-20kg) than those calves on mothers with adequate P diets," he said.

"However, the P deficient cows were 50kg or an entire body condition score (scale 1 to 5) lighter."

Rob said a good way for producers to think about this research finding was to consider that P, similar to fat, for a mature cow was like having savings in the bank.

"The animals can draw on their P 'savings' during times of low availability, but these savings have to be replaced," he said.

Rob said cows that are 'overdrawn' for long periods need time to recover their body reserves.

"At this stage, we do not have a good understanding of the diet and time required to achieve this for breeders in northern

production systems," he said.

"Sustained low-P diets are evident in lower cow body condition scores, delayed pregnancies, poor lactation performance and reduced calf/weaner weights."

Take home message

Rob said producers could be confident they had more flexibility in their management program to supplement mature breeder cows with P.

"The basic recommendation for management has been that P supplements should be fed during the wet season, because this is when the largest responses to P supplements occur - this recommendation still stands," he said.

"However, when it is not possible to feed during the early wet season, P supplements should be started as soon as possible from the middle of the wet season.

"Using body P reserves of the mature cow during lactation can be helpful, but they have to be replenished later in the annual cycle."



Dr Rob Dixon
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On-farm P test a step closer

Discoveries about phosphorus (P) deficiency in northern beef cattle have put producers a step closer to having a simple on-farm test to accurately assess an animal's P status.

Animal endocrinology specialist Dr Stephen Anderson from the University of Queensland is part of an MLA-funded research project that has uncovered new information about P deficiency. The research team investigated how P deficiency affects both young and mature cows, and revealed new markers that indicate P status in cattle.

"During the past 20 years, very little work has been done on the physiology of P deficiency and most current knowledge is based on growing stock," he said.

"This project aimed to improve our understanding of how cows cope with P deficiency and has given us new information that producers might use to make better management decisions."

Stephen said their discovery of new markers that more accurately indicate P status could potentially be combined with emerging medical technology to develop a simple crush-side test for use by producers.

"That's the end game; to make it easier and more cost-effective for producers to manage P deficiency," he said.

Project background

The research team monitored their test herd of mature Droughtmaster cows for one season and found they were very good at mobilising P and calcium from

bone in P deficient situations, particularly during late pregnancy and the first three months post-calving.

This is in stark contrast to growing cattle, including heifers during their first pregnancy and then lactation.

Stephen warned producers that exposing young lactating cows, which are still growing, to extreme P deficiency could have serious implications for their longer-term productivity.

"Evidence from MLA's CashCow project showed that many herds in tough environments cope with this stress by calving only every second year and using the alternate years to replenish their live weight, fat and bone minerals," he said.

Measuring the markers

The research team discovered P deficient cows had an increase in the active form of vitamin D3.

"Vitamin D3 promotes gut uptake of both P and calcium from the diet, so if cattle are eating a low-P diet, this helps them to extract as much P as possible from their feed," Stephen said.

"Besides vitamin D3, other markers of P deficiency indicate how much P in the bone is being mobilised, and these can be used to assess a cow's P status."

High calcium levels in the blood were also found to indicate low P status.

"When P is mobilised from bone, calcium is trafficked at the same time at a rate of two calcium to one P molecule; so in P deficiency, high calcium levels appear in a blood test," Stephen said.

He also said it was possible to use this information to improve the present 'P Screen' test and advance the development of a better crush-side test tool for producers.

Other P deficiency markers uncovered include CTX-1 and an enzyme, Bone Alkaline Phosphatase (BAP).

What's next?

While the project team's long-term goal is to develop a crush-side test for P status, in the short-term they will continue to investigate nutritional and production responses to improve recommendations on how best to manage phosphorus nutrition of northern breeder cows.



Dr Stephen Anderson // T: 07 3365 4756 // E: stephen.anderson@uq.edu.au

Go to www.futurebeef.com.au and search 'MLA's Producer phosphorus manual for the northern cattle industry'

Make no bones about it

A new bone biopsy technique developed with MLA funding means researchers and producers can, for the first time, accurately measure the lifetime impact of phosphorus (P) deficiency on individual animals.

Researcher and veterinarian Dr Lisa Kidd, from the University of Queensland, used bone histology (microscopic analysis of bones) as part of a larger MLA-funded research project, to measure how varying levels of dietary P affect heifers and cows. Lisa developed the new biopsy technique to

measure bone density. It provides detailed analysis of the amount of bone tissue animals lose when they mobilise P stores to cover dietary shortfalls.

"First-calf heifers on low-P diets during late pregnancy and lactation had 30% less bone volume than supplemented heifers at the time of weaning," she said.

"Research has shown that these heifers, if not supplemented during late pregnancy and first lactation, produce lighter calves at weaning and do not quickly recover their bone reserves, even when an adequate diet is restored.

"In another study we saw that, during late pregnancy, P supplementation helped heifers maintain good bone volume even if the diet was poor, as might be seen in the dry season.

"Data is still being analysed, but we now know more about how P deficiency affects cattle, particularly during pregnancy and lactation, and how we might tailor supplementation strategies to improve production."

What can producers do?

Lisa said the production ramifications of being unable to "look after" those young mothers could be considerable.



"We found that mature cows with calves lose even more bone density on low-P diets than heifers because they put more into their calves, particularly during lactation," she said.

The good news is that mature cows are able to regain their bone density, even when on moderate metabolisable energy diets, as long as there is adequate P available in the diet.

Lisa said the lift out message was the importance of P supplementation during lactation.

"Lactation is when heifers and cows lose the most bone density, and they can do it very quickly on low-P diets," she said.

Further developments

Lisa hopes to develop crush-side tools such as ultrasound for measuring bone density and advance the concept of a producer-usable blood test, validated by her biopsy method and other work.

Information derived from the new bone biopsy technique, similar to that used in human medicine, will also improve the existing P screen test and validate hormonal tests that measure P deficiency and other markers developed during the project.

Animals undergoing biopsies did so under surgical conditions, with local anaesthetics and follow-up veterinary care, and all animal work had animal ethics approval.

Feedbase

Looking below the surface

Researchers were shocked when tests from across south-east Australia - home to 29 million hectares of sub-clover pasture - found more than 70% of samples suffered root disease.

Martin Barbetti, Professor of Plant Pathology at the University of Western Australia, said an Australian Wool Innovation-funded soil survey revealed widespread seedling death and root disease that was almost universally severe.

An MLA-funded research program run by Martin and Dr Ming Pei You is now underway to quantify the adverse impacts of soil-borne pathogens and assess and develop cultural and chemical means to minimise damage to sub-clover pastures. They aim to provide producers with flexible management options.

Field trials form the MLA research focused on using cultivation methods, fungicide sprays and seed treatments combined with altered pasture nutrition and clover variety tolerance to establish best management practices.

"We were shocked because we didn't expect to find such entrenched levels of severe disease across large swathes of pasture," Ming Pei said.

"No wonder clover pastures are unproductive and persist poorly, leaving a critical autumn-winter feed gap.

"In terms of the new MLA-funded research,

we still need to collate the 2016 data and revisit the findings in 2017, but it is obvious the long-term solution is resistant varieties."

Critical analysis of the 2015 data revealed that productivity increases of up to four and five-fold were demonstrated for disease-resistant varieties where high levels of disease occurred.

"We already recognise the tremendous potential for disease resistance in naturally developed varieties that have been growing and adapting across Australia for up to 150 years," Martin said.

"We must now use these naturally selected disease-resistant clovers to develop new disease-resistant and disease-tolerant varieties that may potentially eliminate the losses from soil-borne clover diseases."

Dr Brett Nietschke, technical facilitator for the Barossa Improved Grazing Group (BIGG), which conducts on-farm root disease trials for the project, said root disease remained a "hidden" problem, because stunted plants and patchy germination were mistaken for other environmental or plant health issues.

Martin and Ming Pei said the challenges of

BIGG digs deep

The 2016 Barossa Improved Grazing Group (BIGG) trials, funded by MLA at Moculta and Craneford in South Australia, highlighted the complexities in managing root diseases.

The severity of root disease caused by pathogens *Rhizoctonia*, *Pythium*, *Phytophthora* and *Aphanomyces* is related to factors such as temperature, moisture, soil and nutrition.

Root diseases can be caused by a 'mix' of two to four pathogens, which makes fungicide management difficult because the fungicides registered for sub-clover do not have activity against all four pathogens. For example, Apron XL® (Metalaxyl-M) can control *Pythium* and *Phytophthora* at the seedling stage, but has no activity on *Rhizoctonia*.

According to University of Western Australia

(UWA) researchers, *Rhizoctonia* is a particularly prevalent soil-borne pathogen in many pastures across South Australia. Research Fellow Dr Ming Pei You said despite the lack of a broad-spectrum fungicide treatment, fungicide seed or foliar spray treatments may still increase sub-clover germination and survival by up to 30%.

BIGG trials at Craneford in 2016 evaluated the effect of several fertilisers on sub-clover productivity and found the superphosphate treatment (autumn application at 150kg/ha) doubled late winter production. Given the Craneford trial site was low in phosphorous (17mg/kg, Colwell P), the results are a timely reminder of:

- the importance of knowing the soil nutrition status of paddocks
- the benefits of maintaining soil nutrients at adequate levels.



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Getting to the root of the problem

Root disease is hard to diagnose, but the following signs may indicate its presence:

- stunted plants
- poor or patchy germination (see right)
- sudden die-off for no apparent reason
- little or no presence of subterranean clovers.

managing sub-clover seedling death and root disease should not be underestimated.

"For example, we found different types and combinations of soil-borne pathogens frequently occur at the same time," Martin said.

"However, these combinations depend particularly on the growing season, with pathogens like *Pythium*, *Phytophthora* and *Aphanomyces* causing the greatest problems in wetter locations while *Rhizoctonia* causes much more of a problem in dry periods.

"Furthermore, our findings not only highlight the complexity of managing root diseases, but have also led to the development of several tangible, practical options for pasture improvement."

The best long-term answer to the problem of disease-induced seedling death and root disease will come from identifying disease-resistant and tolerant sub-clover varieties. In the interim, it is best controlled through a variety of management approaches. These include:



- cultivating soil to reduce pathogens and subsequent root disease impact on productivity
- coating seeds prior to replanting or using fungicide sprays on regenerated pastures, particularly fungicides that boost plant immunity
- improving soil and plant nutrition to enable better root and shoot growth even when disease is severe
- choosing varieties that perform best in your area (e.g. two cultivars in South Australia that show resistance to root

disease and persist well are Trikala and Clare)

- sowing a mixture of clovers
- using a rotational grazing system that allows more plant growth, which improves root development, even where disease is severe.

The PreDicta B soil test is another tool available to producers.

"While it can be cost-prohibitive in the short-term, PreDicta B may be useful for producers to establish the main causes of root disease on their property," Martin said.



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Resources: MLA's pasture improvement calculator and phosphorus tool are available at www.mla.com.au/tools

Good soils for good nodulation

A productive legume pasture above ground does not necessarily indicate effective nodulation and nitrogen fixation below ground.

A survey of NSW and WA pastures found more than 90% of the analysed pastures had inadequate nodulation, even though effective rhizobia strains were present.

A range of soil conditions affected legume pasture performance. According to researchers Dr Sofie De Meyer, Murdoch University, Dr Belinda Hackney, Charles Sturt University and Janelle Jenkins, NSW

Local Land Services (LLS), soil pH, soil sulphur and molybdenum levels, and herbicide application were factors affecting rhizobia nodulation and nitrogen fixation.

The survey by the MLA and Riverina and Central West LLS-funded rhizobia team involved extensive producer interviews. It investigated a range of factors, including paddock history, herbicide and fertiliser applications, and plant and species diversity and management. Soil and sub-clover plant samples were also taken for analysis.

Of the paddocks analysed, 90% had inadequate rhizobia nodulation with an average nodulation score of 1.8. Within the nodulation scoring system, a score of four is considered average; a score of eight is high and rarely seen in paddocks.

"We were shocked by the result. Visually, the pastures did not indicate the situation was so bad, but below ground effective nodulation and nitrogen fixation was clearly not occurring," Sofie said.



The survey also found that 73% of the paddocks analysed had a soil pH below 5.5, which has a significant impact on rhizobia and the performance of the plant's root system.

"Soil pH is critical. A pH of 5.5-6 is optimal for sub-clover performance and most of the paddocks had very acid soils, well below pH 5," Sofie said.

Other soil fertility deficiencies identified were variable phosphorus and sulphur levels, with inadequacies in 94% of paddocks.

"We don't fully understand the effect of sulphur on rhizobia nodulation but most of the paddocks were below the optimal level, which has highlighted some concerns," Sophie said.

Molybdenum levels are also crucial for nitrogen fixation. Within the Riverina LLS surveyed landholders, only 4% of the 80 landholders in that group have applied molybdenum in the past 10 years.

Reversing the situation

Using MALDIID, the innovative rapid rhizobia identification method developed by Sofie, the nodules were tested to determine if the current rhizobia inoculant, Group C (WSM1325), was present. About 50% of the nodules had the Group C inoculant, which is compatible with sub-clover and other clovers, and is robust and better adapted to a range of soil conditions than the older C strains.

"The low productivity of the clovers may also be attributed to the use of herbicides, particularly those in Group B. Some herbicides can take up to 18 months to break down and residual herbicides damage the root system, which means there are fewer roots where nodules can form," she said.

According to Sofie, further research is required before specific recommendations can be given, but understanding what is happening below the ground will allow farmers to make better soil management decisions.

"I would encourage producers to get some soil tests done, look closely at their soil pH and control the acid by liming. This is really important for improving rhizobia nodulation," she said.

"Additionally, producers should monitor soil nutrient levels; adequate phosphorus, sulphur and molybdenum levels are crucial for rhizobia efficiency and nitrogen fixation.

"It is also important to test the nodules to ensure the current Group C strain is present."



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Read the step-by-step guide to soil testing on page 16 of the August 2014 edition of *Feedback*

www.mla.com.au/feedback



Effective legume pasture nodulation depends on a range of soil factors. This picture demonstrates the difference between good and poor nodulation in sub-clover pasture. The plants on the left show healthy root systems and ample nodulation, especially at the crown, while the plants on the right have poor root systems and low nodulation.



Newer temperate and tropical legumes and grasses could find homes in more southern locations, with MLA-funded trials working to establish if they can offer production gains in drier climates.

The trials began in 2014 on properties at Parkes, in central NSW and in the Dungog-Gresford region in NSW's Hunter Valley.

Project manager Dr Suzanne Boschma, Senior Research Scientist at NSW Department of Primary Industries, said the trials aimed to discover which species would thrive in drier, colder climates like Parkes and which were suited to more challenging soils like those found in the Dungog-Gresford region.

At the end of 2016, and with six months of trials to go, initial results were mixed, with some areas experiencing greater gains than others.

The Parkes project

This project, run as an MLA Producer Research Site with the Cooks Myall Landcare Group, focused on establishing legumes with a grass



Tropicals head south

sward to measure biomass and feed quality and determine whether legumes provide enough nitrogen to replace expensive fertiliser inputs.

Two desmanthus cultivars, Marc and Progardes™, were sown in spring 2014 with a tropical grass mix of Premier digit grass, Gatton panic, Katambora Rhodes and Bambatsi panic. While seedlings of both the grasses and Progardes desmanthus emerged, only the grasses established.

Further testing is needed to determine whether the legumes failed due to seasonal conditions or poor adaption.

The same mix of tropical grasses was also sown for an additional trial in spring 2014. In autumn 2015 four treatments were applied to the trial:

1. Tropical grasses only (no nitrogen fertiliser or legume)
2. Tropical grasses and 100kg/ha nitrogen applied annually in spring
3. Tropical grasses and a mix of Prima gland clover, Casbah

biserrula, Losa sub-clover, Cavalier spineless burr medic and Frontier balansa clover

4. Tropical grasses and a mix of Mintaro sub-clover, Silver snail medic, Bartolo bladder clover, Cefalu arrowleaf clover and Nitro Plus Persian clover.

The grasses and legumes established, but below average rainfall resulted in poor growth of both.

However, good rainfall during winter-spring 2016 provided the perfect opportunity for the legumes to shine. The trial was grazed three times and the two legume treatments produced 5.8–6.7t DM/ha, of which 53–66% was high-quality nitrogen-fixing legume. In contrast, the two grass-only treatments produced 3.6–4.7t DM/ha and no nitrogen.

The number of sub-clover seedlings that have regenerated each year has increased in both treatments, highlighting the legume's good adaption to this environment.

Results to date: winter dry matter production improved and overall pasture production increased following good rainfall in 2016, after a dry start.

The Dungog project

This project, run as an MLA Producer Research Site with the Dungog-Gresford Land & Beef Inc group (pictured during the group's 2016 site field day), aimed to discover:

1. Whether tropical grasses could replace low productivity pastures on lighter soils in the area
2. If there was an alternative companion legume to white clover for tropical pastures
3. If legumes other than white clover could establish and persist in kikuyu-based pastures.

Early results indicated that sub and white clover remained the best choice on low-quality soils and legumes will establish if existing kikuyu and native pastures are sprayed out to reduce competition.

"The trials have shown that the best grasses to sow into a low productivity pasture appear to be *Solander setaria* and Callide Rhodes grass," Suzanne said.

One particularly impressive result was the establishment and survival of setaria in a steep paddock that was dominated with blady grass that had been aerial sprayed out with glyphosate. Prior to establishing setaria, cattle struggled to maintain condition on the pasture, but the stocking rate has now doubled and the cattle are in good condition.

"The Dungog-Gresford Land & Beef Group are understandably excited by their findings and are planning to sow another grass trial this summer," Suzanne said.

Results to date: tropical pastures can offer significant productivity gains on poorer soils.



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Animal welfare

Practical welfare tools on the way

A range of research projects are underway to provide producers with practical, accessible and affordable methods to improve animal welfare.

Producers can expect innovations to improve animal welfare in line with the goals set out in the *Meat Industry Strategic Plan 2020*.

MLA's Program Manager, Animal Health, Welfare and Biosecurity, Jim Rothwell, said the meat industry recognised the importance of securing consumer and community support and was making significant investment in projects aimed at improving on-farm animal welfare.

"It is important to be proactive in this area and MLA's aim is to find practical and effective ways to deliver pain relief products and practices that are not going to break the bank for producers but will improve animal welfare," he said.

"Three pain relief products for sheep at marking are now available; 12 months ago we didn't have any. This is a great example of research producing practical products for use on-farm."

Jim said the projects were also providing the additional benefit of training scientists who will be able to contribute to the Australian meat industry in the future.

Illium Buccalgesic OTM, Tri-Solfen and Metacam 20 are pain relief products available to producers for use on sheep. Producers can talk to their veterinarian or animal health specialist about accessing these treatments.



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Animal welfare project updates

What innovations are set to improve animal welfare outcomes for sheep and cattle? We hear from researchers on the outcomes from recent MLA-funded projects, designed and managed according to animal welfare guidelines.

Giving relief

What: Providing medication in feed or as a drench could significantly reduce pain-related behaviours in sheep following husbandry procedures.

University of New England PhD student Danila Marini (pictured left) carried out a project to help producers provide practical and cost-effective pain relief to sheep and cattle following practices such as tail docking, ear-tagging, castration and dehorning.

"Pain caused by these procedures can last several days and even though pain relief may sometimes be given to sheep and cattle at the time of the procedure, it doesn't last long enough to provide relief for the whole time they experience pain," Danila said.

Findings: The project identified flunixin meglumine as an effective pain relief for sheep and lambs.

"In my study, providing flunixin in feed led to a 15% reduction in pain-related behaviours, compared with lambs that received no pain relief," she said.

The results indicate the oral or in-feed administration of flunixin one to two hours before procedures such as marking (which can include tail docking, ear-tagging, castration and/or dehorning) ensures lambs have therapeutic concentrations in their blood at the time of the procedures.

Danila also suggested medicated feed could be offered before, and on the days following, marking to provide ongoing pain relief.

Up next: The study looked at teaching sheep to self-medicate with an odour added to the treated feed. Following castration, the sheep were given feed containing pain relief and the odour cue. The idea was that if sheep and cattle could be taught to identify and select feed that contained pain relief agents, they could medicate themselves when required.

The self-medication method was unsuccessful and further research is required to develop techniques to teach sheep to successfully select pain relief in feed.



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It's a brainwave

What: Using technology which records electrical activity in the brain has helped researchers identify two drugs that reduce the pain response to castration in cattle.

According to researcher Dr Gabrielle Musk from Murdoch University, pain assessment in cattle is difficult and, until now, there was no simple and reliable method to do so.

"It is particularly difficult to assess pain in *Bos indicus* cattle as they don't always display obvious behavioural changes to pain or distress," Gabrielle said.

How: The project focused on the sensory component of pain associated with castration in *Bos indicus* bull calves, which are currently surgically castrated without anaesthetic up to six months of age or older (if marked at the time of first muster).

Electroencephalography (EEG) equipment recorded the electrical activity in the brain in

response to pain. Changes in blood pressure and heart rate after castration were measured. Post-operative assessment included live weight changes, activity and behaviour.

Findings: The administration of the pre-operative local anaesthetic lignocaine and pre-operative anti-inflammatory drug meloxicam reduced the acute pain response to castration.

"Wherever possible, pre-operative analgesia should be administered to cattle before castration," Gabrielle said.

The results indicate that, although these drugs will increase the cost of castration, they will improve animal welfare.

Up next: Further research is required to refine the method of drug administration and identify pain assessment techniques that are easy to implement.



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Northern solutions

What: This research is evaluating the effectiveness of several options to manage pain associated with husbandry practices in the northern beef industry including dehorning, castration, spaying, ear notching and branding.

University of Sydney researcher Dominique McCarthy hopes the project results will encourage producers to uptake best practice.

"The research is applicable to all cattle regions but northern production is a particular focus due to the difficulties of implementing conventional, currently available pain relief in an environment of large properties and herd sizes, where cattle may only be handled once or twice a year," Dominique said.

How: The methods tested include a topically applied anaesthetic, a cold spray that chills the skin and anti-inflammatory drugs. Animal pain has been assessed using a combination of behavioural, physiological and production parameters.

Findings: Early results were varied, with topical anaesthetic showing a significant

reduction in wound sensitivity after castration and scoop dehorning, while anti-inflammatory drugs may be useful to provide additional analgesia.

"Another interesting result was the significant improvement in average daily weight gains over the week following concurrent dehorning and castration when using a combination of topical anaesthetic and anti-inflammatory drugs," Dominique said.

"The results indicate the potential for producers to satisfy consumer preference for better welfare beef through the use of applied products that do not add much extra time during routine management operations."

Up next: The behavioural data is still being analysed and further research is required to investigate the effects of these products on inflammation and wound healing. The researchers are also interested in investigating the use of topically applied products to reduce bleeding and provide pain relief, following spaying of heifers and cows.



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CoMarketing

A productive partnership

MLA's CoMarketing program gives industry partners access to professional expertise and support to grow their market base, which has a flow-on effect across the supply chain. The previous edition of *Feedback* profiled four CoMarketing partnerships and here we look at how another two companies have used the program.

More information: www.comarketing.mla.com.au

Ethical, sustainable, flavoursome



Gippsland Natural was developed by a cooperative producer group in 1999 and was one of the first producer-owned beef brands to carry the Meat Standards Australia (MSA) tenderness guarantee.

When the cooperative subsequently changed its structure, the Gippsland Natural brand was tendered off to a new company established by former members.

Producing grassfed, free-range beef, reared without hormonal growth promotants or antibiotics, Gippsland Natural is underpinned by the MSA eating quality assurance. Its marketing emphasises producer ownership and regional provenance. Two other brands operate under the Gippsland Natural banner: 'Enviromeat' is Australia's first environmentally certified beef brand, and 'Australian Natural' targets niche export markets.

Directors Bob Davie, 'Bimbadeen', and Paul Crock, 'Biran Biran', are committed to

environmental sustainability on their properties, where they have reduced on-farm emissions and increased soil carbon. They head a group of 20 like-minded producers, many of whom have implemented the Enviromeat environmental management system, and are urging others to adopt similar methodologies to ensure Gippsland Natural evolves as a carbon neutral brand.

Paul Crock (pictured) spoke with *Feedback*.

As producers, what motivated you to develop a brand and move into the next stage of the supply chain? The original cooperative sought higher returns by differentiating their cattle from the commodity market, but marketing their

carcase beef to retail butchers limited opportunities to engage directly with consumers. Following the move to a leaner management structure, we switched our focus to the foodservice sector. We tried to partner with specialist retail and wholesale

butchers numerous times, and then adopted a vertical integration pathway, employing our own team of butchers and taking on the market directly.

Which markets are you selling your meat to? Most of our clients are high-end

restaurant and foodservice customers in Melbourne and regional Victoria. We also need to add value to cuts and trimmings so we work closely with like-minded manufacturers of products ranging from pasta meat sauces to gourmet pet products.

Our busiest time is January when we supply serious quantities of beef to Australian Open hospitality customers. Feeding the masses at this major sporting event has been key to our business growth and development, and we hope to replicate this success at other stadiums nationally.

How has MLA CoMarketing funding supported your strategic growth plan?

The last round of CoMarketing funding

A cut above



allowed us to promote a Quick Response (QR) matrix barcode system that attaches a machine-readable optical label containing traceability information to each product. When chefs and retail customers scan the code they are directed to our new website, an information resource and portal, or to an online store for direct customer orders. We are now developing a purchasing system app for chefs.

CoMarketing funding has also facilitated our participation in large-scale events, including the Melbourne Food and Wine Festival, which raised our profile among chefs. It also secured a brand ambassador, leading Peruvian chef Alejandro Saravia from Melbourne's Pastuso Grill, Cevicheria and Pisco bar, who is helping to build our reputation among key stakeholders.

How has the CoMarketing investment made a difference to your business?

The capacity to provide genuine traceability is having a real impact among chefs and discerning 'foodies', and representation at major tradeshow and events has enabled us to substantially extend our market reach.

What are your goals? To enter the export market, and seize opportunities to partner with large foodservice customers and manufacturers who want to forge a direct connection with cattle producers and the farms where the produce is grown.

We plan to work with an export works in Gippsland that could process and MSA grade our cattle to increase annual throughput, while ensuring we deliver on our eating quality promise. Expansion will also require a company structure review and research into other equity partnerships.

Providence brought Sam McNiven and Wang Tse together more than 20 years ago when they attended school together in Orange, central western NSW, and a passion for prime beef raised in the rolling hills of the fertile cattle grazing country has brought them together again.

In 2012, Wang – a renowned restaurateur with a chain of 40-plus Hong Kong eateries – joined forces with third-generation cattle producers, Sam and his cousin James Milner to establish Providore Global, a vertically integrated company marketing prime Australian beef to restaurants and retailers globally.

With extensive cross-sector experience spanning Australian and international markets, the founding directors, and production head Tom Maroney, have expertise in breeding, rearing and processing beef cattle as well as marketing, quality assurance, management and logistics to create tailored beef solutions for individual markets.

Rosedale Ruby, named after the historic award-winning Angus-Charolais stud owned by James's family, is the company's signature consumer brand.

Every cut of Rosedale Ruby premium-grade, free-range beef comes from the company's



herd of young Angus-Charolais cattle. Raised hormone and chemical-free on native grasses, the cattle are finished on grain for about 110 days to enhance flavour, tenderness, marbling and nutrition.

Sam McNiven (pictured), head of operations and founding director, spoke with *Feedback*.

As producers, what motivated you to develop a brand and move into the next stage of the supply chain? We developed our own brand and became a member of the Northern Cooperative Meat Company because we wanted to vertically integrate the business and provide our pure beef direct to the consumer.

Which markets are you selling your meat to? We currently supply domestic and international markets in Australia, Hong Kong, China, Taiwan, Japan, Korea, Vietnam, the United States, Switzerland and the Middle East.

How has MLA CoMarketing funding supported your strategic growth plan?

CoMarketing funding supported the production of a retail video that engages a cross-demographic of consumers and appeals to the emerging middle-class market, which attaches importance to meat purity, value, taste and nutrition.

The video aims to increase brand awareness, recall and loyalty, and to communicate a compelling 'gate-to-plate' evidence-based story that qualifies and differentiates Rosedale Ruby as premium-quality, grassfed Australian beef.

How has the CoMarketing investment made a difference to your business? The video has helped us build confidence and trust. It has instilled a greater understanding of our brand and products, and this has translated into contracts with supermarkets, restaurants and leading foodservice operators throughout Australia and globally. Our export volumes doubled from 2014-15 to 2015-16; largely attributable to CoMarketing support.

What are your goals? To earn Rosedale Ruby an international reputation as the most respected and trusted brand for pure Australian beef. Immediate goals are to invest in improved retail packaging and initiatives to educate end users on how to best enjoy the various beef carcass cuts, particularly less traditional cuts. We are dedicated to providing consumers with a unique dining experience and will continue to look for ways to maintain and improve eating quality.



www.gippslandnatural.com.au



www.providoreglobal.com

Market insights

China: pinpointing opportunities through insights



There are 353 cities in China and more than 7.5 million Chinese households willing to pay a premium for high quality, safe red meat. So how can Australian red meat businesses target innovations and marketing initiatives in such a massive, complex market?

MLA Donor Company's (MDC) new China Insights2Innovation program provides a partnership opportunity for Australian red meat companies looking to develop markets in China.

In preparation for this program, MLA commissioned in-depth research to identify

opportunities for businesses already operating in China, or new entrants to the China market.

The Insights2Innovation research project, part of the Australian Government-funded Rural R&D for Profit program, identified the most attractive cities and channels,

potential target consumer segments and influences on consumer behaviour in China. The research also uncovered the best approaches to create more value when working with common China business models.

MDC CEO Dr Christine Pitt said the

Want to get involved?

MDC is looking to partner with Australian red meat exporters and value chains to take advantage of the insights gathered through this research.

"We're looking for partners who want to pursue high-value growth strategies in China over the next two to five years," Christine said.

"These partners could be red meat businesses currently operating in China who want to move away from a commodity-based business model or new entrants looking to establish higher value offerings."

China Insights2Innovation partners will receive support in the form of co-investment funding, value chain and business model design assistance, access to market insights and industry experts, and support to trial new decision-support tools.

The next step

With the China Insights2Innovation program now in the implementation phase, the research team will be turning their focus to analysing similar market opportunities in the ASEAN region, followed by the Middle East.

researchers determined the most attractive cities for Australian red meat businesses from a political, economic, social, technological and environmental view.

"They analysed an enormous amount of data and also undertook extensive on-the-ground market research and consumer testing in the top 15 cities," she said.

Factors taken into account included the distance of the cities from Free Trade Zones (economic zones where the government allows a more free market approach) and ports, population growth, working-age population and government systems.

The findings helped develop decision-support tools for China Insights2Innovation partners to identify the best market opportunities.

Tools include databases which contain information on Chinese cities, market sizing in the top 15 attractive cities and retail store meat pricing.

Understanding the way business works

The research also provided a more detailed understanding of common business models in China and how to best work with them.

Christine said the research identified a number of companies within China that MDC would like to work with, and provided case studies of Australian and international businesses that have had success, or otherwise, in China.

"These case studies will be very useful for our producers and processors as they build their own value chains," she said.

Particular issues identified include:

- value chain efficiency and effectiveness
- cold chain logistics
- competitiveness based on customer connection and loyalty to Australian products
- identification of in-country partners that align with partner strategy.

Decision-support tools are also being developed based on findings, including a 'top 50 value chain attractive China customers interactive database'.

Tapping into market trends

"With Australia facing increased competition in the Chinese market from other 'clean and green' beef producers - notably Brazil and the US - it was critical that research focused on ways to establish a premium point of difference for Australian product," Christine said.

"We've identified the key theme of 'food without fear', which is the integrity promise that wealthy Chinese consumers are demanding of anything they eat."

"This is partly driven by the healthy eating trends and pollution issues in China, but also by the food fraud and food scares that have occurred there."

With that in mind, MDC has engaged a number of companies to explore innovative technologies related to anti-counterfeiting, traceability assurance and temperature-monitoring smart packaging to enhance and support Australia's 'safe' reputation.



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Fast-track to innovation

Producers looking to accelerate their rate of innovation and adoption of new technologies will be able to access greater expertise and support to achieve their goals as part of a new MLA Donor Company (MDC) pilot program.

The Producer Innovation Fast-Track program is an MDC initiative designed to accelerate the adoption of innovations that have the potential to significantly improve farm and value chain performance.

Under the program, producers who are innovators, early adopters, AgTech entrepreneurs or future value chain leaders will be provided with the expertise, co-funding and support to take their business to the next level.

Producer Innovation Fast-Track is open to working with producers and producer groups on projects in three key areas:

- innovations to improve on-farm performance
- insights and innovations that lead to new products, brands and value chains
- new ventures and start-ups.

MDC will be conducting a roadshow of sessions around the country to provide more information and workshop ideas with interested producers. Following these sessions, producers will be able to book a confidential consultation with MDC (on the same day) to further explore their own ideas and objectives.



www.mla.com.au/fasttrack

Check out China on Landline



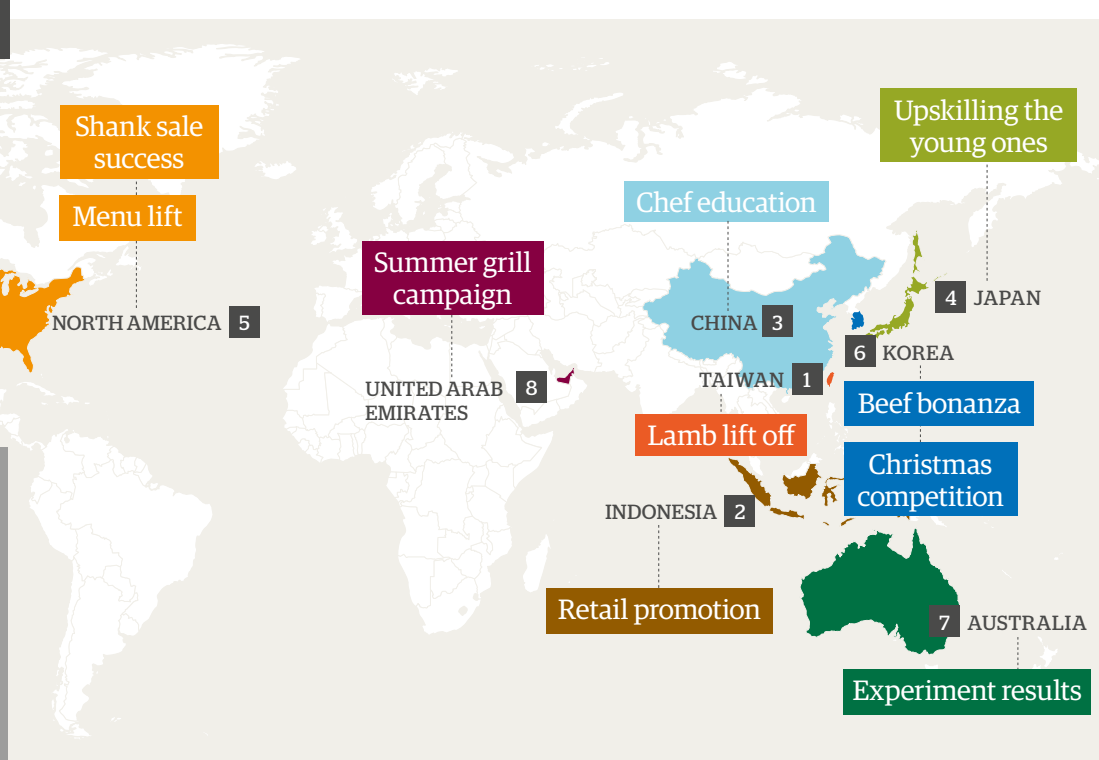
Watch MLA's General Manager, International Markets, Michael Finucan, explain the opportunities and challenges for growing the market share of Australian beef in China.

More information

www.abc.net.au/landline and search 'Premium beef'

Around the globe

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

**1 TAIWAN****A lamb plan**

Eleven new lamb products were launched in 65 Carrefour hypermarkets in Taiwan. Developed with MLA support, the products were designed to change the stereotype that lamb is only suitable for winter. Selected items will be sold in 22 smaller Carrefour stores and 100 outlets, in total, will carry the range by the end of 2017.

MLA initiated the concept, coordinated the product development and implemented the new range to help raise the profile of Australian lamb following the new Free Trade Agreement between New Zealand and Taiwan.

2 INDONESIA**Bolstering beef**

Nine retail chains in the Greater Jakarta area have increased their marketing and display area for Australian beef in an MLA program to offset competition from proteins like buffalo.

A three-phase approach involved training 60 retail category managers about the benefits of Australian beef and its usage, supply of point-of-sale merchandising and the development of infographics and tutorial videos for retailer marketing.

3 CHINA**Top chefs targeted**

Forty-one chefs from five star hotels and fine dining establishments now know more about non-loin Australian beef cuts following an MLA workshop in Beijing.

Organised with Angliss Beijing, MLA supply chain consultant David Carew (pictured) demonstrated utilisation, cutting and cooking of 70-day grainfed rump and oyster blade.

"It's a very knowledgeable and helpful event. It's opened my eyes on non-loin cuts utilisation and a solution for cost saving," said executive chef Ma Jian Ping after the event.

**4 JAPAN****Growing loyalty**

More than 60 business development seminars were conducted by MLA in Japan last year.

The seminars, aimed at building long-term support for Australian beef, are pitched at young staff working in the foodservice and wholesale sectors. MLA educates attendees on issues such as Australia's meat safety record and covers areas like new menu ideas.

5 NORTH AMERICA**A social shank success**

Sales exceeded forecasts by 50% and the promotion length was extended in an autumn/winter Australian lamb shank offer at the Seasons 52 chain of 40 restaurants. JBS Australia's Great Southern lamb shank was featured in six social media posts which achieved more than 450,000 impressions and two 'e-blasts', sent to 400,000 subscribers to tell the story of Australian lamb. MLA, who co-funded the promotion with JBS Imports and the Darden Restaurant Group (owners of the Seasons 52 chain), backed it up by reaching 20,514 people through social media channels.

Chefs are immersed

Eight chef immersions, held across the US in 2015-16, have resulted in Australian beef and lamb finding permanent places on restaurant and foodservice menus.

A recent survey found 63% of respondents trialled Australian

product after attending an immersion and 58% said it was used permanently as a result. About 60% were using Australian beef and lamb, 29% lamb only and 11% beef only.

The immersions involve cooking and cutting demonstrations, recipe development and sharing the story behind Australian beef and lamb.

58%

of chef immersion participants surveyed are now using Australian red meat permanently on menus

6 KOREA

'True Aussie' festival

More than 60 tonnes of Australian beef were sold in 20 days during Lotte Vicmarket's Australian Beef Festival in December. This represented a sales increase of 39% on the same time in 2015.

Lotte Vicmarket is a large warehouse-type retailer that devotes 92% of beef shelf space to Australian beef. The festival was held in five outlets with a focus on chuck eye roll, oyster blade, thin skirt and eye round cuts.

The first 15 customers to spend a certain amount each day received a 'True Aussie' beef frypan and 150,000 customers received direct mail promotion of the event. Thirteen online news items also promoted the event.

\$1.2 million

worth of Australian beef sold during promotion

Festive Facebook promo

More than 197,000 Facebook users were reached in an MLA-organised competition to promote the use of 'True Aussie' beef and lamb in Korean Christmas cooking.

Entrants had to post videos about why they should be one of six couples to join Chef Hong in his restaurant for a cooking demonstration of 'True Aussie' beef and lamb.

7 AUSTRALIA

Experiment pays off

There were more than two million views of the Trinity Experiment 'mockumentary', one of MLA's nutrition marketing campaigns in 2016.

The Trinity Experiment is a story about a set of triplets, who were separated at birth and raised under similar circumstances, with the only difference being their diets.

One child was raised on a diet of meat only, the second child on green vegetables only, and the third on a healthy balanced diet - featuring beef and lamb of course. The campaign tells the story of the 30-year experiment, and highlights how a healthy balanced diet featuring red meat helps people perform at their best.

If you missed it, search 'Trinity Experiment' on YouTube.



8 UNITED ARAB EMIRATES

An online grilling

Videos featuring MLA's Chef Tarek grilling Australian beef and lamb generated more than 780,000 views halfway through a six-week summer campaign run with Carrefour, one of the UAE's largest regional retailers with more than 50 outlets.

Chef Tarek profiled a different cut each week (beef rib eye, tenderloin, sirloin and lamb leg, shoulder and cutlets), with recipes targeting Carrefour's 740,000 Facebook followers.



On the ground

MENA

Dr David Beatty
MLA International Business Manager,
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The opportunities for growing demand for Australian red meat in MENA are numerous, and at times challenging, as each country within the region has its own cultural and economic differences.

Overall, the Middle East is a valuable market for Australian red meat, taking 142,000 tonnes in 2016 worth \$1 billion.

Of the 28 countries in the region, Saudi Arabia is the region's largest market for Australian beef, taking 36.5% of the exports in 2016. For sheepmeat, the United Arab Emirates is the largest buyer, taking 27.5% of all lamb and mutton exported to MENA.

The Saudi Arabian market for Australian beef grew substantially during recent years when Brazilian and American exports were banned because of disease concerns. Brazil's re-entry into the market last year and the growing presence of Indian buffalo means Australia now has to work hard to retain market share in a predominantly price-dependent market.

One regional trend we've observed is the gradual shift in consumer purchasing habits from the traditional butcher or wet market to hypermarkets, where retail meat labelling is inconsistent and there is limited information on cooking styles and methods available at point-of-sale.

MLA is working directly with retailers, establishing trust and educating them about Australian red meat's credentials to enhance 'True Aussie' brand recognition and what it represents.

'Freshness', 'country of origin' and 'halal integrity' are all attributes that consumers in Saudi Arabia look for when buying their beef and lamb. It is important to create a link between freshness and the 'True Aussie' logo, which includes Australian halal labelling.

To combat the presence of our global competitors, we have built strong connections with many retailers including LuLu, the largest retailer in the Middle East with 128 outlets.

Last year, MLA ran butcher training for six retailers and supported regional promotions in Saudi Arabia, Oman and UAE. A large variety of cuts were showcased in meat displays and about 70 in-store sampling events and cooking demonstrations were held.

Global benchmarking

How does Australia compare?

The global *agri benchmark* results from 2016 reveal Australian beef and sheep producers are some of the most efficient in the world.

agri benchmark is a global, non-profit and non-political network of agricultural economists, advisors, producers and specialists in key sectors of agricultural value chains. The cattle and sheep network has more than 30 member countries, covering 90% of world beef production and 55% of sheepmeat production and has been producing results of comparative analysis over the last 14 years.

Ben Thomas, MLA Manager Market Information, said the comparisons found Australian producers generally performed well.

Beef

"Australia remains an efficient beef producer, with a moderate-to-low cost of production," Ben said.

The analysis found typical Australian beef farms achieved the highest levels of profitability since 2006 and were mostly profitable on both a short and medium-term basis in 2015, but only two of the eight systems being monitored were profitable in the long-term, given Australia's relatively high opportunity costs of land and labour.

While cow-calf enterprises were generally profitable in 2015, cattle finishing was not, although it had improved from 2014 levels.

"Australia has moderate to low calf weaning rates and cow herd productivity, compared with similar systems," Ben said.

Sheep

Compared with the rest of the world, Australian and New Zealand sheep farms are the most profitable in the medium-term,

although profit levels declined slightly from 2014 levels.

Total returns to the sheep enterprise only (not counting returns from other outputs of the farm such as crops or cattle) for typical farms in eastern Australia were mixed, with nearly all farms experiencing decreased returns across most categories in comparison to 2013 and 2014.

"Australian farms tend to have lower weaning rates than European countries, and maintain similar weaning rates to more rangeland or less-developed production systems where nutrition and/or genetics may be constraints," Ben said.



Read the full reports in the prices and markets section of www.mla.com.au

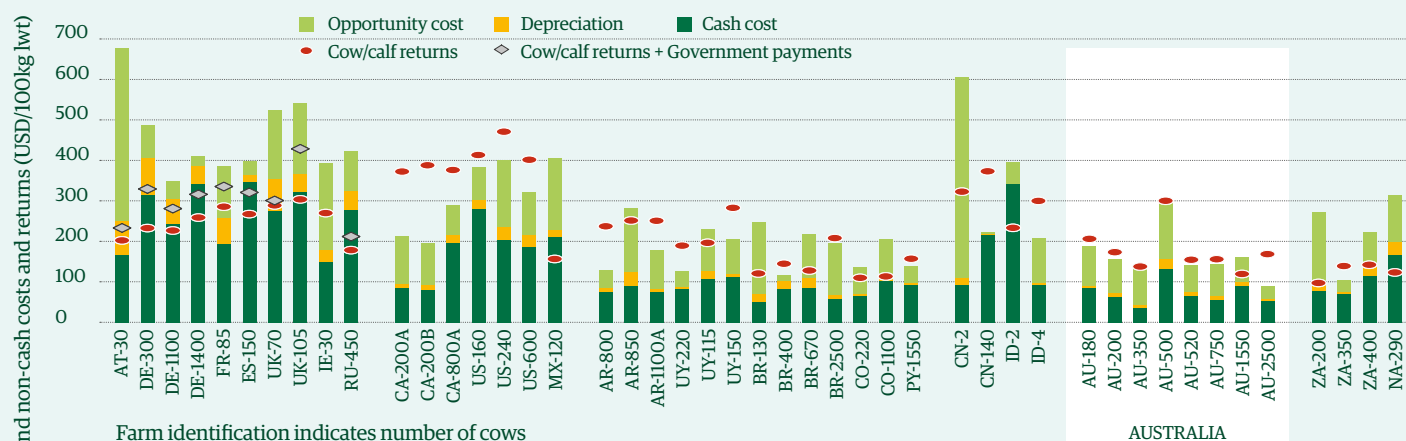
Figure 1 2012-2015 beef prices received (USD/100kg lwt sold)



Source: *agri benchmark*

In comparison to global competitors Australian beef finishing systems have:

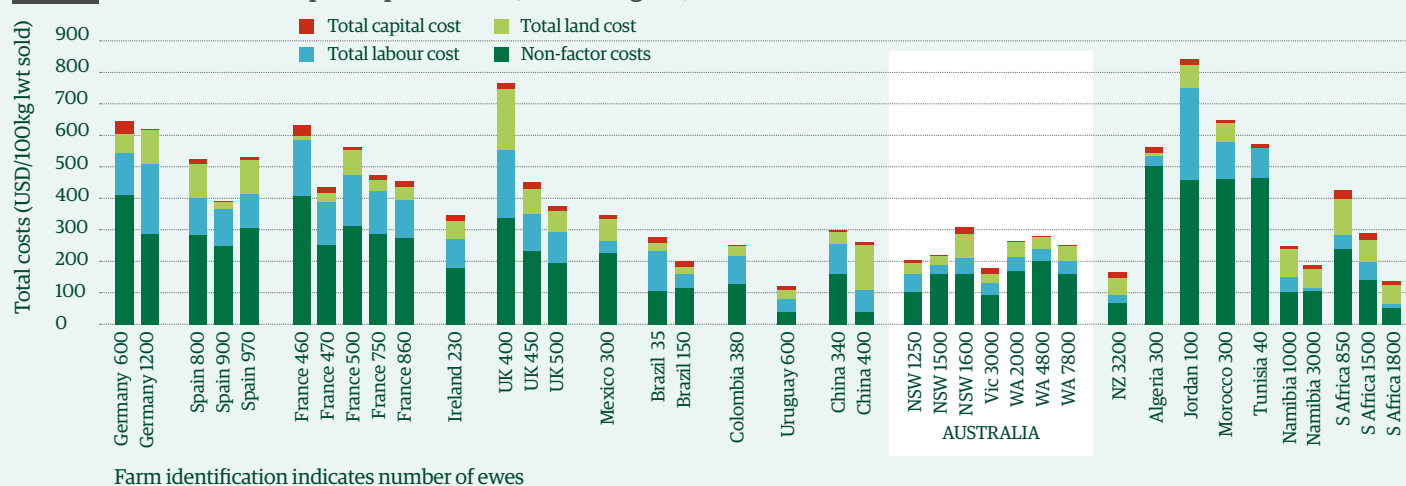
- moderate-to-high weight gains in southern beef systems, but low weight gains in northern beef systems – this is partly due to drought, but mainly due to their feedbase (with performance comparable to pasture-based South American and African systems)
- below-average prices, again reflecting a low cost base, the continuing impact of drought and an over supply of cattle into 2015. Most countries experienced a slight reduction in beef prices between 2012-13 and 2015 (excluding the US, Canada and China, where higher prices have been maintained)
- low-to-moderate costs of production, with returns that generally covered the costs of production – which out-performs most beef finishing systems in the world (excluding China)
- returns that improved marginally in 2015 from 2013-14 levels – which is opposite to most beef finishing systems around the world
- high land and labour opportunity costs, which do not tend to be covered through beef returns
- lower levels of profitability than the cow/calf component of the whole-farm beef production system – a consistent observation over the past four years.

Figure 2 Costs, returns and profitability of cow-calf production 2015 (USD per 100kg live weight sold)

Source: agri benchmark

In comparison to global competitors Australian cow-calf systems have:

- more diversified whole-farm systems (maintaining both cow-calf and finishing systems within the same business)
- moderate-to-low weaning rates and moderate-to-low productivity per cow, especially in northern systems which have comparatively low reproductive rates, extended generation intervals and lower growth rates and turn-off weights
- lower revenues due to significantly lower weaner prices (30% lower than South America and only a third of prices received in North America) and cull cow prices, although there has been a 30% improvement in total returns from 2014-15
- a continued reduction, year-on-year, of the cost of cow-calf production, which is in part due to exchange rate movements
- experienced the most profitable year (2015) since 2006, with all Australian systems achieving good short and medium-term profits
- high labour productivity (kg lwt produced/hour of labour input) to compensate for high wage rates (although the differences in the cost of wages are reducing, in part due to exchange rate movements).

Figure 3 Total costs of sheepmeat production (USD/100kg lwt)

Source: agri benchmark

In comparison to global competitors Australian sheep systems have:

- moderate losses, mortalities and wastage
- moderate-to-high meat production efficiency
- moderate-to-low reproductive efficiency – with potential for further improvement through nutritional management and genetics – if economic to do so
- above-average growth rates for animals sold or slaughtered at weaning
- high labour costs, but maintain excellent labour productivity which makes Australia competitive in terms of economic labour efficiency
- comparably low to moderate sheep returns (revenues), which have decreased from 2013-14 levels
- maintained low total costs of production which have tended to decline year-on-year
- since 2013, with exchange rate movements against the US\$ having played a role
- continuing good sheep enterprise profitability across most Australian systems, which is in alignment with global trends
- top whole-farm profitability globally due to diversification and scale.

United States//Intercollegiate Meat Judging Competition tour

The 2016 Australian Intercollegiate Meat Judging Competition (ICMJ) 'top five team' took a whirlwind tour of the US as part of their prize in the Australian competition.

Chloe Gould (University of Queensland), Macky Lawrence (Charles Sturt University), Rachel Tulloch (University of Sydney), Gabi Ryan (University of Sydney) and Olivia Swan (Murdoch University) are this year's top five ICMJ team and were accompanied by coach Demi Lollback and assistant coach Tim Ryan.

ICMJ is sponsored by MLA to grow student knowledge of the red meat supply chain and its career opportunities.

The students enjoyed intensive tours of American meat industry facilities and competed at several intercollegiate meat judging competitions during the month-long tour.

Tour highlights included:

→ visiting the San Angelo Producers Auction

in Texas, the largest sheep and goat saleyard in the US

→ touring meat science facilities at Angelo State University, Texas Tech University, Western Texas A&M campus and University of Wyoming

→ touring the Mountain States Co-op lamb processing plant and the JBS Greeley beef processing plant in Colorado, plus visiting the JBS Kuner Feedlot and Cervi Cattle Company custom feedlot

→ gaining a strong understanding of the United States Department of Agriculture beef grading system and putting their new skills into practice at facilities such as Cargill Friona, Fort Morgan, Tyson Amarillo and JBS Greeley

→ competing at the Texas Tech Southwest Invitational Contest and the National Western Stock Show Meats Judging Contest, where they won the lamb judging section.



Rachel Tulloch, Gabi Ryan, Chloe Gould, Olivia Swan and Macky Lawrence at the pre-contest dinner at JBS World Headquarters.



www.icmj.com.au



Attending the National Western Contest Awards Breakfast (at the National Western Stock Show - Denver) were Demi Lollback (coach), Olivia Swan, Macky Lawrence, Gabi Ryan, Chloe Gould, Rachel Tulloch and Tim Ryan (assistant coach).



Undertaking training at Colorado State University were Rachel Tulloch, Gabi Ryan and Macky Lawrence.

Brisbane//Beef industry breakfast

Five mega trends impacting global red meat consumption were outlined to guests at the recent MLA Beef industry breakfast in Brisbane.

MLA's Chief Marketing and Communications Officer, Lisa Sharp (pictured right, second from left with MLA's Nick Sangster and Ben Thomas and guest speaker AUX Investment's Jennifer Wainwright), was one of the speakers at the event and explained the mega trends:

1. **More from less:** Consumers will seek higher quality, natural foods with minimum human intervention.
2. **Great expectations:** This trend relates

to transparency and traceability and the demands of shoppers wanting personalised products which suit their needs perfectly.

3. **The silk road:** As wealth increases across Asia, South America and Africa the face of global markets will change and with it, the demand for protein.
4. **Forever young:** With an ageing population in many wealthy countries, increasing health-related expenditure offers opportunities for the red meat industry to look at value adding, branding and image.



5. **Fear, uncertainty and doubt:** Driven by global uncertainty, consumers want to know where food comes from and its safety attributes.



Lisa Sharp
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Broome, WA//Advocacy workshop

Sixteen producers and stakeholders joined MLA and the Kimberley Pilbara Cattlemen's Association (KPCA) at Broome in December to learn how to use social and traditional media to tell their stories.

Speakers included:

- MLA's Community Programs Manager **Jax Baptista**, who gave an overview of MLA's community engagement projects and the importance of social licence for the red meat industry
- KPCA Executive Officer **Catherine Marriott**, who spoke on how language shapes community perceptions; she said that by understanding the impact of communication, producers can contribute to the narrative surrounding red meat production and create transparent and genuine engagement with the community
- **Gerry Gannon** from Gannon Media, who workshopped traditional media skills which included what makes a story, how to approach a journalist and how to prepare for and execute an interview like a pro
- **Tim Gentle** from Think Digital, who worked with attendees on their social and digital media skills, teaching them about virtual reality, social media outlets and the best digital platforms to showcase Australian agriculture
- MLA's Stakeholder Engagement Manager **Sue Dillon**, who finished off the day with an overview of the new myMLA online platform (see page three) and MLA's work with industry, research institutes and technology providers to develop an objective carcass measurement tool.



Jax Baptista
E: jbaptista@mla.com.au



KPCA Chairman David Stoate (right) works on his interview technique with Gerry Gannon from Gannon Media.



Above and below: producers getting a handle on using devices to tell their story.



Upcoming events



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

Grazing Land Management EDGE

Customised for northern Australian producers, this three-day workshop will show producers a practical and planned approach to improve the productivity and sustainability of their land.

When and where:

21-23 March at Emerald, Queensland

Bookings:

Byrony Daniels
T: (07) 4991 0867
E: byrony.daniels@daf.qld.gov.au

MLA BeefUp forums

MLA BeefUp forums give producers the opportunity to learn the latest results from levy-funded R&D.

When and where:

There are 12 BeefUps planned for 2017. Visit www.mla.com.au/events for details on dates and locations.

More information:

Barbara Bishop
T: 0408 999 009

Producer Innovation Fast-Track roadshow

Find out how you can access the Producer Innovation Fast-Track program at a roadshow event.

When and where:

14 March – Esperance, WA
16 March – Geraldton, WA
20 March – Katherine, NT
22 March – Charters Towers, Queensland
24 March – Roma, Queensland

More information:

E: fasttrack@mla.com.au
www.mla.com.au/fasttrack

FAST FOOD

Turn up the barbecue and tempt your tastebuds with these delicious lamb recipes ready in minutes.



Sticky barbecued forequarter chops

8 lamb forequarter chops, trimmed
½ cup hoisin sauce, plus extra for greens
1 tbsp brown sugar
1 tsp sesame oil, plus extra for greens and mushrooms
250g mixed Asian mushrooms
1 clove garlic, crushed
2 bunches choy sum, chopped into 8cm lengths
Steamed brown rice, to serve
Serves four

1. Pat chops dry with paper towel and place on a plate. Mix hoisin, sugar and sesame oil in a bowl with one tablespoon warm water until smooth. Brush marinade onto lamb.
2. Preheat barbecue flat plate until very hot. Place a piece of baking paper on the grill to prevent sticking and place lamb chops on the baking paper. Cook in batches to prevent overcrowding. Cook lamb for four to five minutes each side until marks appear and lamb is cooked to medium. Rest for five minutes.
3. Wash choy sum and toss in a hot frying pan or wok for 30 seconds or until just wilted. Remove and drizzle with a little sesame oil. Add mushrooms and garlic to the frying pan and toss for 1 minute.
4. Serve lamb with choy sum, mushrooms and steamed brown rice.

Lamb and haloumi skewers

600g lamb rump, trimmed
250g haloumi cheese
1 tbsp dried oregano
2 tbsp lemon juice
2 Lebanese cucumber, cut into bite-size chunks
3 heirloom tomatoes, cut into wedges
1 lemon, to serve
2 seeded capsicums cut into similar sizes as the lamb

1. Dice lamb rump into 3cm cubes and haloumi into 2cm cubes. Toss lamb and haloumi in a bowl with olive oil and dried oregano. Season with salt and pepper.
2. Thread the lamb, haloumi and capsicum onto the skewers, starting and finishing with a lamb cube. Preheat the barbecue flat plate or char-grill plate to moderately hot before adding the skewers.
3. Let the lamb skewers cook on one side until moisture appears before turning. Cook for about two minutes on each side. Drizzle lamb skewers with lemon juice in the last minute of cooking.
4. Remove from heat, cover loosely with foil and rest skewers for three minutes before serving. Serve with cucumber, tomato and lemon cheeks drizzled with olive oil.

Serves four



Sesame lamb cutlets

12 lamb cutlets
½ cup soy sauce
2 tbsp mirin
1 tsp grated ginger
1 tsp sesame oil
2 corn cobs, cut into rounds
2 bunches broccolini
1 clove garlic, sliced
1 large red chilli, cut into long thin strips
1 tbsp sesame seeds
Steamed rice, to serve
Serves four

1. Place lamb cutlets in a bowl. Place soy, mirin, ginger and sesame oil in a jug and pour half over the lamb. Reserve the rest for the broccolini.
2. Toss the broccolini, with garlic, chilli and reserved mixture and barbecue with the corn until charred.
3. Meanwhile, cook the lamb cutlets for three minutes on the first side and two minutes on the second side, or until cooked to your liking. Transfer lamb to a clean plate and sprinkle with sesame seeds. Serve lamb with corn, broccolini and steamed rice.

