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MEAT & LIVESTOCK AUSTRALIA

RESEARCH DEVELOPMENT AND EXTENSION

2020 CATTLE UPDATE

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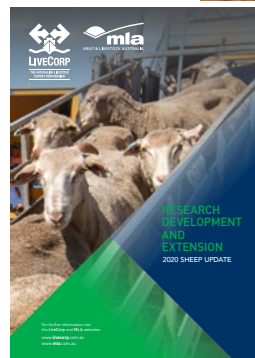
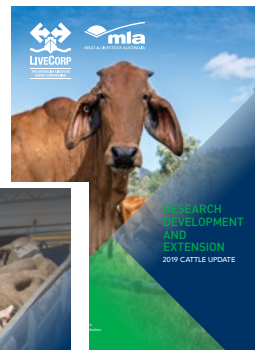
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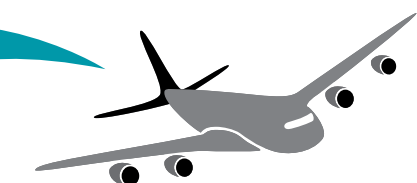
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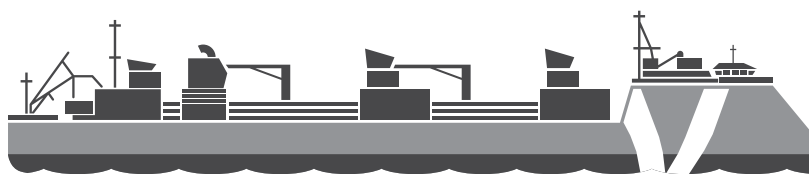


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WELCOME TO THE CATTLE RD&E UPDATE FOR 2020



It has been an exciting year for the Livestock Export R&DE Program, delivering on some important initiatives and setting up the industry for a new phase of learning.

We welcomed Trysh Bridgen as independent Chair of the program's two guiding committees

(see below). She has been instrumental in embedding new processes and leading the prioritisation of investment that stakeholders have been calling for, and we are all committed to delivering.

The release of LIVEXCollect, and its acceptance as the mandatory reporting tool for the Australian Standards for the Export of Livestock (ASEL), provides an opportunity to capture industry-level data for the first time.

Progress has been made on incorporating animal welfare indicators into ASEL 3.0, and identifying the interactions between stocking density, bedding and ammonia production, with the department pushing hard to get results to feed into the further refinement of ASEL.

We have a wealth of material at our disposal as these projects continue to deliver – to inform strategy, identify

research priorities, and support ongoing improvements to animal welfare and operational efficiency. Our task, as always, is to extract maximum value from everything we do – past and present.

As industry settles into the changes and additional reporting brought about by ASEL 3.0, we need to understand both intended and unintended consequences, and where further investigation is needed. And ensuring the consistency and quality of data being provided through LIVEXCollect is just as important as aggregating and analysing it.

As we head into a new year, we will continue to focus on identifying and advancing the industry's key priorities.

SAM BROWN
CEO, LiveCorp



Research has a vital role to play in any industry staying on a path of continuous improvement.

To ensure the livestock export research, development and extension (RD&E) program is delivering results for the industry, it has been implementing recommendations of a review –

including the appointment of an independent Chair of its Management Committee and the restructured Livestock Export Research and Development Advisory Committee (LERDAC).

I was appointed to the role in August, having spent the past 30 years working across a range of Australian government fisheries and agriculture bodies, including the live animal exports regulator. I've built a strong track record of delivering innovative outcomes in policy and regulation, including leading a departmental reform program for live export regulation.

The new structure of LERDAC is bringing more discipline and focus to RD&E investments, ensuring the industry's money is invested wisely as it faces the challenges of evolving community expectations. Earlier this

year, the RD&E Program released a Blueprint outlining the priorities for the next five years, and LERDAC has now identified the six areas for immediate funding (see p4) and is mapping out how to best invest in meeting these priorities.

Having one chair of both committees is also improving communication between the two arms involved in delivering RD&E outcomes for the industry.

I look forward to continuing to bring my extensive experience and insights to the role of steering the RD&E Program to keep delivering the results needed for both the economic and social environments the industry is working in.

TRYSH BRIDGEN (NEE STONE)
LERDAC Chair



Setting research priorities

As the new independent Chair appointed to guide the livestock export research, development and extension (RD&E) program, Trysh Bridgen (nee Stone) has a pivotal role in helping the industry navigate its way through social and economic challenges.

Trysh takes on the role after almost 30 years working in Australian government fisheries and agriculture bodies, with a strong record of delivering innovative outcomes in policy and regulation.

She is well known in the livestock export industry and understands its operation, having spent five years working for the regulator, and leading a departmental reform program for live export regulation.

The purpose of the LEP RD&E Program is to invest in projects that seek to build knowledge, fill gaps in existing understanding, and develop, trial and implement practical extension outputs in the areas of animal health and welfare, supply chain efficiencies and market access.

Following a review of the LEP RD&E Program, Trysh now leads a revitalised Livestock Export Research and Development Advisory Committee (LERDAC) and the Program's Management Committee, which are tasked with providing strategic research advice and representing both industry priorities and community expectations.

The RD&E Program released a Blueprint earlier this year, outlining its funding priorities for the next five years. We sat down with Trysh to discuss the Blueprint prioritisation process and how the revitalised LERDAC is working.

Q: What is your vision for the RD&E Program?

A: I like a challenge, I like the people in the industry and this is a really interesting area of work.

I think that research is key to delivering a sustainable future for the industry and I want to make sure that we are spending our limited research funds wisely to deliver the maximum impact.

My vision is to have these two committees working in partnership to identify and deliver the best possible research to meet the industry's priority needs.

Q: How are RD&E priorities being determined?

A: The Blueprint has 16 research priorities, identified through extensive consultation with exporters and producer groups.

LERDAC has grouped these into three timeframes for investment, given there is a finite budget available.

Group one includes the priorities identified as requiring immediate new investment. Group two are the next focus for new investment, and group three are areas to deal with following the first two groups.

The immediate, group one priorities for RD&E investment aim to:

1. Standardise data collection to promote completeness of supply chain information, transparency and benchmarking.
2. Improve understanding of, and identify effective controls for, animal health and welfare risks that operate along the supply chain, including in overseas markets, along with timely prevention management strategies.

3. Better understand and aim to address public expectations of animal health and welfare across the supply chain.
4. Improve the training environment to encourage uptake of leading animal health and welfare practices across industry.
5. Improve information recording and facilitate automation of reporting.
6. Provide stakeholders with knowledge of trends, preferences and expected market requirements that can inform their business practices.

Now the work starts of trying to direct those priorities into research projects.

Q: How is the revitalised LERDAC working?

A: LERDAC is the skills-based strategic advisory committee for the RD&E Program.

It comprises producer and exporter representatives nominated by the red meat peak industry councils, an independent technical advisor, an animal welfare/social science representative, and representatives of LiveCorp and MLA.

The new structure is bringing a fresh discipline to the process and the committee is more strategically focused. Instead of trying to wade through hundreds of pages of milestone reports, our focus now is on priorities and outcomes.

We are in the process of developing investment logic maps and project concept briefs for the top six priorities, setting up a working group with a view to having them in place before the end of the financial year. That will provide clarity, not only to the committee, but to other industry stakeholders and the research community about what we're investing in, why we're investing, and what we want out of it.

It doesn't mean we can't have ideas coming up from the grassroots through the committee or through the program

regarding what should be done, but we need to make sure they align with the priorities we have set for ourselves.

It's all about making sure industry's money is invested wisely and we get the most impact from every dollar spent. Taking a bit of time to plan and think is not a bad thing.

Q: Tell us about the other work that's underway?

A: The committee has been conducting a stocktake of all the research done over the past 12 years, to identify what

we know, where the gaps are, and what extension and new research are needed.

We're developing a really good research summary that is going to be communicated to industry members.

The committee has also been working hard on communication tools we can roll out more broadly to show what's happening in the program; illustrating projects currently funded, how they're tracking and when they will be delivered. You should see these in the next edition of the RD&E Update.

Dissecting decades of data

Analysis of 30 years of data on the export of cattle, sheep and goats from Australia has found significant improvements in performance, driven by factors such as better preparation, vessel design and on-board management.

The livestock export industry has collected reports of mortality on shipments since 1988. This data has now been uploaded into a modern, secure, and web-based system, allowing comprehensive analysis of long-term trends.

A detailed examination of all 2,240 long-haul voyages (ten days or more) between 1988 and 2017, funded by the Livestock Export Program (LEP), shows the impact of factors such as time of year, the vessel being used, and ports of loading and discharge, on the survival of different classes of animals.

Over the 30 year period, the average voyage mortality rate has gone from 2.5% to 1.5% for sheep, 0.7% to 0.3% for cattle, and from above 2% to 0.5% for goats. The year-to-year variability of results in the early years has also declined, with high mortality voyages now a rare and sporadic event.

The analysis indicates that higher sea surface temperatures create higher risk of mortality in both sheep and cattle. However, time of year has a greater impact on sheep survival than it does on cattle and goats.

Now the database has been modernised, it will have a greater capacity to be remotely and regularly updated, and will enable analysis to be more easily completed into the future. There may also be opportunities to include further categories of data and link the database to other information – potentially including LIVEXCollect, a system developed by industry and now

being used for regulatory reporting under the Australian Standards for the Export of Livestock (ASEL) version 3.0.

It's hoped that these initiatives and the associated analysis will contribute towards achieving an evidence-based approach to supporting innovation and initiatives to improve regulatory and operational management.



Bedding down welfare

For cattle being exported by sea, the condition of their bedding and the amount of ammonia in the air can impact animal welfare, health and performance outcomes.

The Australian Standards for the Export of Livestock (ASEL) outline the requirements for bedding such as sawdust and wood shavings on ships carrying cattle overseas. However, there is no scientific evidence on how the levels have been determined, how or why this may affect the amount of ammonia produced, or whether air flow will affect the production of ammonia under certain bedding application rates.

To get answers, a new phase of research is now underway as part of the Livestock Export RD&E Program's four-year project partnership with the University of New England (UNE).

THE TRIAL

The experiment involves *Bos indicus*-cross cattle sourced from a property at Pearce's Creek in northern NSW through a collaboration between UNE and the NSW Department of Primary Industries, Grafton.

Researchers at UNE are investigating the interaction between bedding application rates using sawdust and air flows on faecal pad formation and ammonia production of cattle under simulated voyage conditions.

The cattle are being placed in respiration chambers for seven days, to reflect a typical timeframe for cattle to travel before the ship's decks are washed out or they reach their destination.

Three different bedding treatments are being used, including no bedding, and commercial wood shavings applied at the equivalent of 50% and 100% of ASEL requirements, which is seven tonnes for every 1,000m² of cattle pen space for voyages of ten days or longer. For cattle leaving ports from Brisbane or north of latitude 26° south to Southeast Asia, no bedding is required.

The large, completely enclosed chambers have controlled flow-through

ventilation used to collect total gas emissions. Low, medium and high air flow rates are being tested, with the lowest equivalent to the minimum ASEL requirement.

In total, nine combinations of bedding rates and airflow volumes are being tested in the experiment.

Researchers anticipate greater quantities of bedding combined with higher air flows will reduce the amount of ammonia in the air and in the manure pad. It may also reduce the moisture content of the manure pad, improving the under-hoof conditions, improving the condition of the hooves themselves, and reducing the amount of manure getting stuck to the cattle's coats.

It is anticipated that the amount of time the animals spend standing and lying may vary, depending on bedding rates. There is also potential for lower production of other gasses in the air such as carbon dioxide and methane in chambers where bedding is applied.

OUTCOMES FOR INDUSTRY

The four-year partnership is focused on undertaking rigorous research and translating the science into practical applications for the Australian livestock export industry.

Multiple projects are being conducted to develop a prediction model to recommend optimal bedding application rates and airflow to help improve the welfare of cattle being exported – and benefit humans.

Identifying the factors associated with ammonia accumulation will enable ships' crews to manage ventilation and bedding in ways to reduce the risk of high ammonia levels which could affect both animal and crew health.

It will also make a major contribution to future changes to the standards that govern conditions for livestock moving through the export supply chain, enabling improved animal welfare during transit and providing a factual basis to underpin the trade as a sustainable and ethical part of the Australian livestock industry.





WHY AMMONIA?

Scientific intervention to help predict the production of ammonia on both cattle and sheep voyages is required because ammonia in the air irritates airways and, in some instances, can lead to bovine respiratory disease (BRD) in cattle. It is also a potential workplace health and safety risk for crews on board livestock export ships.

Under ASEL 3.0, ammonia levels in a representative number of pens on livestock export ships must be recorded and reported daily from November 2021. If they exceed or are likely to exceed 25ppm in any livestock spaces, appropriate reduction measures must be implemented.

The introduction of this particular measure has been delayed to allow for testing of ammonia detection devices, and a range of equipment will be tested as part of the experiments at UNE.

WHY BEDDING?

The primary use of bedding on cattle voyages from Australia is to minimise the incidence of lameness, skin abrasions and coat contamination; control moisture in the manure pad and help to lower moisture in the air; and to maintain lower levels of ammonia.

Inadequate bedding on the floor of cattle pens during long haul voyages may lead to excessive urine and manure accumulating on surfaces, which deters cattle from lying down to rest. This may increase the chance of exhaustion and/or slipping, depending on sea swell. Combined with lower air changes, inadequate bedding may result in a higher concentration of pad- and air-ammonia over time.

OTHER PROJECTS

As part of the project partnership, a UNE Masters student is looking at sources of variation in the production of ammonia. The laboratory-based, in vitro experiments don't involve animals, but utilise small micro-chambers, examining the depth and surface area of manure pads across a range of different diameters and heights.

Experiments in 2021 will include nutritional studies looking at the impact of different protein and energy levels on ammonia production.



Participants in a recent workshop in Vietnam to discuss the development of local animal welfare laws included Australia's Agricultural Counsellor Tony Harman, Tien Nguyen from the Livestock Export Program, and members of Vietnam's Ministry of Public Security and Ministry of Agriculture and Rural Development.

Vietnam takes animal welfare lead from Australia

The Australian livestock export industry's commitment to the humane treatment of livestock is now influencing the establishment of animal welfare legislation in one of its key markets, Vietnam.

The Livestock Export Program (LEP) is undertaking a three-year, US\$500,000 program of work with the Vietnamese government to develop national standards in animal welfare which are in line with expectations for the treatment of exported Australian livestock.

Taking a proactive, long-term approach by supporting and empowering local officials in Vietnam to change its systems demonstrates the industry's commitment to making improvements beyond Australian livestock, as the new laws will minimise the risk of poor outcomes for domestic cattle.

The opportunity to be involved is due to the LEP's positive relationship with the Vietnamese government, and previous work with the Ministry of Agriculture and Rural Development (MARD) on the development of chilled beef standards in Vietnam.

A grant from the Australian Department of Agriculture, Water and the Environment, through the Agricultural Trade and Market Access Cooperation (ATMAC) program, will help deliver the animal welfare

standards. A draft is anticipated to be ready by October 2021.

Meanwhile, the Vietnamese government is monitoring the implementation of the Livestock Global Assurance Program (LGAP), and designing the animal welfare standards to allow potential integration of LGAP as a way to support the regulation.

One of the projects within the three year agreement is aimed at stunning being officially recognised as a supportive tool to allow good animal welfare outcomes at the point of slaughter.

Australia introduced stunning devices to Vietnam through the Exporter Supply Chain Assurance System (ESCAS), and they are used in all abattoirs handling Australian cattle. However, while common practice in Vietnam for domestic cattle too, lack of legal recognition means stunning devices can't be widely distributed.

Once stunning is officially supported, it will be actively promoted by the government as best practice animal welfare at the point of slaughter.



Aid project focuses on feedlot sector

Creating a strong feedlot sector in Vietnam holds many potential benefits for stakeholders throughout the supply chain, from Australian livestock producers right through to smallholder farmers in Vietnam.

About 80% of the cattle currently imported into Vietnamese feedlots are slaughter weight animals. However, there is an opportunity to feed and finish more cattle to improve feed gains and ultimately productivity and profitability.

Not only would the market be better able to withstand fluctuations in price and availability of Australian cattle, but it would provide more flexibility to send lighter weight Australian animals for finishing.

One of the current barriers to growing the feedlot sector in Vietnam is the cost of feed, and sourcing a consistent supply of the right mix of ingredients for feed rations.

To address this issue, the Australian Centre for International Agricultural



Insights from Vietnam's traditional channels

With 80-90% of all beef in the Vietnamese supply chain going through traditional channels, research is examining opportunities to differentiate and add value to beef from locally processed Australian cattle.

Research (ACIAR) is looking to fund a project to work with feedlots in Vietnam and smallholder farmers around them, to identify and ensure a consistent, local supply of the right crops.

ACIAR is the Australian government's specialist agricultural research-for-development agency, within the Australian aid program. Its purpose is to contribute to reducing poverty and improving the livelihoods of many in the Indo-Pacific region through more productive and sustainable agriculture emerging from collaborative international research.

The Livestock Export Program (LEP) has been working with ACIAR to develop the business case for the project, using the in-market team's understanding of the local situation to identify the benefits to both Australia and Vietnam of being able to integrate smallholders into the Australian cattle supply chain.

The LEP is also providing support by introducing ACIAR representatives to peak industry councils and producer groups involved in live exports, lot feeders in Australia, as well as Australian exporters and Vietnamese importers.

ACIAR is also working with commercial companies, and there are opportunities for partnerships and potentially co-investment to leverage the foreign aid funding to develop an integrated supply chain model.

There are two key channels for beef that is processed the night before, then purchased and consumed within a day – wholesale to distributors for foodservice, and direct to consumers through thousands of wet markets across Vietnam.

The Livestock Export Program (LEP) in-market team is using a two-phase project to identify touchpoints along the way, with the aim of defining a value proposition for beef from Australian cattle. This will help to inform investment decisions, such as the potential for success of point-of-sale displays and other marketing campaigns, and other development programs.

A quantitative study, shadowing a sample group of shoppers around a wet market, informed questions for a larger qualitative study involving 100 people which has revealed some valuable insights:

- Wet market shoppers find the experience is important to them for a number of reasons – some rational, such as price, negotiation, and trust; and others more emotional, such as social connections and the atmosphere.
- Tactile experience – touching, smelling and seeing the meat – is very important and has a direct relationship with decisions on what to purchase.

- There is very little chilled product or perceived desire for it. Warm beef is the norm and the preference.
- The strength of the relationship between seller and shopper is influential and deep, but is only as good as the last transaction.
- There is essentially no store structure or point-of-sale messaging in the wet market environment that provides the ability to communicate any differentiation of product. Rather, it is based on the shopper-seller relationship.
- The seller has significant influence on what is sold to the shopper through recommendation, relationship, price, and a degree of consistency.

More work is required to fully understand opportunities for industry to identify product as Australian, and to provide assurances of this along the supply chain. Only once this is done is there potential to start influencing sellers through practice change or direct marketing.

At a supply chain level, the LEP has already engaged with several commercial companies to understand how to convert insights from the research into opportunities, including changing the way they distribute or market product.

The project is due for completion in early 2021.



Source: Sembawa Breeding Centre (<http://www.bptu-sembawa.net/>)

Surveys measure impact of buffalo meat

The Indonesian government started importing frozen Indian buffalo meat (IBM) in 2016 as a way of providing people with access to affordable nutrition – part of its ongoing push toward greater food security.

It is now estimated that around 75% of IBM in Indonesia is sold through wet markets, competing directly with fresh beef from locally processed Australian and local cattle. Indonesia is Australia's largest live cattle export market and around 90% of beef from those animals goes into wet markets.

The massive distribution of IBM through wet markets is assumed to exist because of demand from meat sellers, with surveys in wet markets in 2017-18 indicating some of those sellers mix or substitute fresh beef with IBM, as well as other products, as they can obtain greater margins compared to genuine fresh beef. This poses a threat to demand for fresh beef from Australian cattle, and also to the competitiveness of the Australian industry.

To measure the current impact of IBM on the fresh beef trade in Indonesia, the Livestock Export Program (LEP) is undertaking a research project to build on the surveys it carried out in the early days of IBM importation. Collecting objective and up-to-date information will support the Australian livestock export industry to make informed decisions and respond to increased competition.

Research will be conducted in very traditional central markets, as well as the more modern markets in the Greater Jakarta area, and also in Medan, Sumatra – a traditional stronghold for IBM.

The project will examine what drives consumer decisions when they are buying fresh beef in the

wet market. This includes non-household consumers who buy beef on a daily basis for their small restaurant or home-based catering businesses, and are estimated to make up around 70% of people who buy fresh beef in wet markets.

The LEP wants to identify whether there are attributes or factors that influence their purchase decisions beyond price. It is also an opportunity to gauge their awareness that some sellers may be thawing frozen meat, including IBM, and substituting it for fresh beef, and how much this matters to them.

Researchers will also be collecting new data on volumes of IBM sold to small

restaurants and food service through wet markets, factors affecting the purchasing decisions of distributors and stall holders, and attitudes towards beef and IBM more generally.

Project outcomes and recommendations will enable the LEP to make informed decisions about the value proposition of any future activities and investments in marketing, research or other interventions in the fresh beef market. For instance, the likelihood of success for any promotion of 'Australian' beef, given the risks associated with meat substitution and other distortive practices.

Results from the research will be available in 2021.



Overcoming barriers to the adoption of stunning

As the number of Australian cattle exported to Indonesia has risen over recent years, there's been an increase in the number of abattoirs approved to receive them.

A proportion of these do not use stunning prior to slaughter, and the Livestock Export Program (LEP) is working to understand why.

The LEP played a key role in introducing the Exporter Supply Chain Assurance System (ESCAS) to Indonesia in 2011. This included the introduction of stunning, which is encouraged but not mandatory under ESCAS, in line with the guidelines set by the World Organization for Animal Health (OIE).

In 2019, it was estimated that around 90% of ESCAS-approved abattoirs in Indonesia were stunning Australian cattle prior to slaughter. The number of facilities has grown to 407, with many of the new ones not using the practice, which has brought it down to around 85% in the latest figures.

Just as the community in Australia is concerned about the implications of this, the livestock export industry is keen to ensure the best welfare for the cattle, and a research project being run by the LEP team in Indonesia is exploring the barriers to adoption.

While many people automatically assume religious beliefs are behind a reluctance to use stunning, there are several factors at play, and many facilities are considered 'fence sitters' who are open to the suggestion of upgrading to stunning.

A lack of understanding about what it is, and how it works, is a key barrier. Many people have never been exposed to the practice – from butchers and abattoir owners through to government officials. Under Islamic law, animals must be alive and healthy at the time of slaughter, and there are many people who have concerns that stunning an animal is not halal. However, there are others more concerned by the need to purchase the equipment needed, including the stunners themselves, and have staff provided with appropriate training in their use.

In combination, this makes it difficult for Australian exporters and the importers they work with to insist on the use of stunning when finding new facilities to expand their operations.

The LEP is working with exporters to identify some of the 'fence sitters' willing to participate in the project. A dedicated technical expert consultant and a trusted Muslim academic from a local university will then visit them, discuss their concerns, explain the science behind stunning, and answer any technical questions.

The LEP, and the Animal Welfare Officers employed by ESCAS-approved facilities, already provide workshops, training, and supported learning programs to both stun and non-stun facilities. This includes working with a modern abattoir in Bogor with competent trainers to provide training and stunning workshops.

This project will act as a pilot to identify ways industry can provide support to more of the abattoirs in their supply chains, to help them understand and ultimately upgrade their facilities to use stunning prior to slaughter.

Breeding gains in Indonesia

Indonesia has seven government-run nucleus cattle breeding centres providing replacement animals for other local government breeding facilities and limited free distribution for smallholder programs.

As part of a government-to-government technical cooperation project, the Livestock Export Program (LEP) team in Indonesia is managing a 12-month project to help improve the quality of genetics in the nucleus herd.

Australia's livestock export industry works closely with its Indonesian counterparts, providing skills and knowledge to expand Indonesia's cattle breeding capacity, which in turn strengthens the relationship between the two countries.

The project will draw on the expertise of the University of New England (UNE) and Meat & Livestock Australia

to share information and exchange of expertise across both countries.

Working with breeding centre staff, they will assess the functions and effectiveness of existing data collection processes and systems towards Indonesia's specific breeding objectives, as tracking genetic gains over time is only possible once the ideal performance traits have been identified.

The cattle in the breeding centres have a mix of genetics including local Bali and Ongole cattle, as well as European breeds. There is a focus on improving carcase weight and reproductive

performance but limited use of performance and genetic recording.

A series of seminars and workshops will be run to share information and experiences relating to Australia's production systems, including cattle breeding, genetics and data management. Manuals and other training materials will also be produced.

The project is being funded by the Australian government's Department of Agriculture, Water and the Environment as part of bilateral technical cooperation under the Indonesia Australia Working Group on Agriculture, Food and Forestry Cooperation.

LGAP gains official recognition

The Livestock Global Assurance Program (LGAP) strengthens Australia's ability to foster world's best practice in animal welfare and management in overseas markets. It is now in operation, with livestock exporters able to use LGAP audits as part of demonstrating their regulatory compliance.

Australian exporters are only allowed to send livestock into supply chains where every component has been approved by the regulator, the Department of Agriculture, Water and the Environment.

LGAP provides certification to individual businesses, including the exporters themselves and the importers they trade with, as well as feedlots, depots, farms and abattoirs which handle Australian livestock once they arrive in a destination country. It shares the accountability and responsibility throughout the supply chain, with tools and resources available to help businesses implement a best practice management system.

The department recently provided approval for LGAP audit checklists to be used as part of an exporter's ESCAS obligations. This is an interim measure, allowing LGAP to operate ahead of changes to legislation which will allow AniMark to seek formal approval as a Third-Party Provider of Assurance (TPPA) services. This is expected to occur in March 2021, when the provisions of the *Export Control Act 2020* come into effect.

The department has also established an industry-government working group, including exporter representatives, to work through the operational requirements once TPPA arrangements are in place.

Meanwhile, AniMark is working on developing a new standard to enhance the existing control and traceability provisions in LGAP. The consultation phase has been completed and AniMark is developing a draft standard for public comment scheduled for the first quarter of 2021.

TEST AUDITS

To introduce LGAP to industry participants and provide an opportunity to experience it first hand, AniMark and the Livestock Export Program (LEP) are running a project to support exporters, importers and facilities through an initial audit. This will also allow the induction, training and other processes to be fine-tuned.

AniMark has also released its membership and fee schedule, available on its website. A provisional membership category for exporters has been established with reduced fees, to allow them to use the AniMark IT conformance system. This is a useful tool to help provide visibility of audit activity and performance of their supply chain partners.

ONLINE RESOURCES

AniMark has been providing free, online training for industry stakeholders over recent months, in preparation for the launch of LGAP. It covers topics including the LGAP Standards, how to conform to LGAP, and how to use the AniMark IT conformance system. Training resources are available on the AniMark website.

The LGAP Standards have been updated to ensure they are compliant with current ESCAS requirements. AniMark has also developed a range of supporting resources such as guidance templates, checklists and management system manuals. These materials have been translated into Bahasa and Vietnamese, and are all available on the AniMark website.

For more information visit www.animark.com.au



Livestock Global Assurance Program
LGAP

LGAP is a new program which provides an alternative approach to demonstrating compliance with ESCAS

LGAP has been developed with the support of the Australian livestock industry. It provides clear and objective requirements for the management of livestock and helps support the sustainability of the live export trade. LGAP builds on the Exporter Supply Chain Assurance System (ESCAS), providing a pathway to continual improvement. By adopting LGAP, Operators and Facilities will have access to tools and resources to implement a best practice management system to enhance their businesses.

Delivers efficiencies | Encourages best practice | Helps safeguard trade

What benefits does LGAP provide?

- Enables individual Operators and Facilities to be recognised for achieving a standard of excellence
- Delivers consistent high quality audit services
- Eliminates duplication of audits and unnecessary cost
- Facilitates access to Australian livestock
- Access AniMark's IT Conformance System to help manage your audit activity
- Specifies formal pathways for complaints and appeals

Independence | Integrity | Transparency

AniMark

What is LGAP?

LGAP is an independent conformity assessment program through which Australia's livestock export industry can demonstrate its compliance with the Exporter Supply Chain Assurance System (ESCAS). It uses internationally recognised standards to provide clear and objective requirements for the management of livestock in overseas markets.

LiveCorp and Meat & Livestock Australia (MLA) have funded LGAP's development through the Livestock Export RD&E Program, and continue to invest in projects to support its implementation and ongoing operation.

LGAP is administered by independent public company AniMark. Once approved as a Third-Party Provider of Assurance (TPPA) services, AniMark will have reporting obligations to the Australian Government, which remains the regulator of the Australian livestock export industry.

Data to drive performance

As the world becomes increasingly data driven, efforts are underway to determine the appetite for participants in the livestock export supply chain to share information with each other, to drive productivity and improve animal welfare.

Livestock producers who supply the live export market are increasingly interested in what happens to their animals on board ships and in-market. It provides confidence about the animals' health and welfare, and insights into their performance in areas such as growth and meat yield.

Australia's meat processing sector already provides feedback to producers on data such as animal health and carcass qualities, but there is nothing similar for the livestock export industry as a whole.

Some exporters are equally keen to identify which properties generally have animals that deal well with a voyage – or do not – so they can improve their business practices. Furthermore, there are importers, lot feeders and abattoirs in our markets who want animals proven to provide more opportunities for profitability.

In vertically integrated, closed-loop supply chains in the livestock export sector, there are already instances where this information flows freely. However, it is far more complicated at an industry-wide level, where there may be fears of giving away commercial advantage.

The Livestock Export Program (LEP) is helping interested exporters to understand what data already exists, what systems are being used to collect data, and whether the information is in a format that allows it to be de-identified, shared and analysed.

The project has consultants working with individual companies to tailor the discussions to their supply chains, and identify what opportunities exist, build scenarios around decision-making should such data be available, and develop a series of recommendations from the outcomes.



In a previous study, there was varying appetite amongst the livestock export industry for data sharing along the supply chain. Drivers included an increased need for transparency around welfare, to give producers the confidence in export management practices to defend the trade if necessary, as well as opportunities along the supply chain to increase productivity and profitability.

In general, the study found that domestic participants were willing to provide data on welfare, but not as ready to provide data perceived to be production focused and therefore sensitive. The willingness of in-market participants to provide both welfare and production data appeared significantly less than domestic participants.

However, there was more variance within segments of the supply chain than between the different parts. That is, some producers would not participate at all and others would participate as fully as possible. At the same time, at all segments along the entire supply chain, some participants would fully participate.

While it's not for everyone, the latest project will test what is possible and the benefits data may offer to those willing to participate. It may also develop a platform to enable data to flow through the live export supply chain for those that see value in it.

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Cold climate checklist

Cattle can adapt to live in a diverse range of climates. However, it takes time to adjust and extra management is needed to protect their welfare in the meantime.

The first 4-6 weeks are critical for cattle being exported from Australia during its warmer months (late spring to early autumn) into the northern hemisphere winter period (late autumn to early spring), as they need time to develop a winter coat and add protective fat stores.

The Livestock Export Program (LEP) has developed a *Cold climate destination checklist for cattle* to provide details

about essential management procedures around water, nutrition and feeding, facilities and bedding and transport and handling.

To help cattle acclimatise, it is important to provide:

- a safe, high energy ration, as metabolism increases to stay warm, and to build a layer of subcutaneous fat

- appropriate dry bedding to insulate livestock from cold ground
- appropriate protection from wind chill.

The checklist may be used by the exporter or importer to help prepare for the livestock's arrival and ensure the cattle adapt more easily to their new environment, whether that is in a shed or outside.

Making connections

A world-wide search is on for technology to allow automated collection of data on livestock export ships and real-time monitoring of a range of factors affecting animal welfare.

While cruise liners have had some form of wireless internet in place for more than a decade, it's not a simple case of installing the same systems on a livestock carrier. Sensors, transmitters and wires on a cruise liner are relatively protected – they do not have to withstand the dust and dirt that may be created by livestock and their feed, or high pressure wash downs during and between voyages. Nor do cruise ships have as much steel making up the decks and holds between the sensors and a computer in the crew quarters or on the bridge.

Many livestock ships already have a range of temperature and other monitors on board, and even more data collection will be required within the next 12 months to meet the requirements of the Australian Standards for the Export of Livestock (ASEL) version 3.0.

The core challenge is being able to transmit and consolidate data from

multiple wireless devices in real time on board a ship, then relay the data to the cloud. In most cases where automated loggers are being used, the stock hands or crew currently have to walk around so they are in close proximity and download the data onto a phone, while ship-to-shore communication is limited.

As part of the project being run by LiveCorp, a working group of ship owners has come together to understand what software, systems and technology are already in place, and their limitations, before thinking outside the box about what may be possible in an ideal world.

While the initial focus was on compliance with the regulations, and increased transparency and animal welfare, it is clear there are benefits for ship owners and crews as well. There are similar opportunities in having an alert go off when temperatures and humidity rise

in livestock pens, or when something breaks in the engine room; and getting a reliable connection between the ship and shore to help trouble-shooting an issue.

Now the challenges have been clearly defined, the task is to scout for existing technologies which may provide a solution. Consultant Beanstalk AgTech is running a challenge-led innovation process to tap into networks in areas such as IT and telecommunications, to reach out even further into industries such as submarines and other types of transport and logistics. Promising proposals will be shortlisted and providers brought in to present to the working group.

The process is the latest stage in a project funded through an Australian Government grant, which in 2019 included trials of dehumidification technology on a ship in the Middle East.

The livestock export supply chain directly impacts both producers and licensed livestock exporters. Because of this, LiveCorp (as the research and development corporation for the livestock export industry) runs a joint program with Meat & Livestock Australia to ensure that all stakeholders benefit from industry research. This program is known as the Livestock Export Program (LEP).

Current LEP RD&E projects

Project	Start Date	Finish Date	Life Budget (\$)
Animal welfare indicators pilot for the livestock export industry	31/07/17	31/05/21	871,460
In-flight environmental monitoring and management	01/03/19	01/11/22	91,000
UNE project partnership to investigate bedding, ammonia and stocking density	15/05/19	30/01/24	1,200,000
LEP R&D systems review implementation	26/08/19	30/05/21	142,000
Shipboard provision of animal health equipment	15/11/19	30/03/21	49,875
Determination of control and traceability standards for LGAP implementation	30/03/20	15/11/21	227,800
National livestock export industry sheep, cattle and goat transport performance report 2020	14/12/20	30/06/21	51,602
Animal welfare indicators for on-board surveillance	15/05/20	30/01/21	73,200
Updating the current heat stress risk assessment model software	18/12/20	30/06/21	385,000
Updating the port climate data for the HSRA Model	15/12/20	01/05/22	165,500
ASEL 3.0 Implementation Projects:			
1. Review, update and development of materials for the LiveCorp Shipboard Stockperson Accreditation Program	30/09/20	30/12/20	52,500
2. Update to the ASEL App			
Exporter simulations of the Incident Response Plan (IRP)			PENDING
Updating the shipping routes to ports north of the equator for the HSRA model			PENDING
Update to the live air stockpersons manual			PENDING



For further information visit
the LiveCorp and MLA websites:
www.livecorp.com.au
www.mla.com.au

LiveCorp, in partnership with Meat & Livestock Australia as the Livestock Export Program (LEP), acknowledges the Commonwealth's financial contribution to eligible research and development projects. All RD&E reports are publically available on both the LiveCorp (www.livecorp.com.au) and MLA (www.mla.com.au/research-and-development) websites.