



Australia's changing live sheep export trade

Australia's live sheep export trade has fundamentally changed over the past few years, with industry initiatives, regulatory reviews and research all contributing to continual improvements in animal welfare outcomes.

Among other things, export companies have changed management practices in pre-export preparation and on the ships carrying sheep overseas, and automated environmental monitoring systems are now in use.

The industry introduced a moratorium on shipments to the Middle East during the northern hemisphere summer, which has now become part of the regulations.

The government has also increased the space available for each animal on ships, improved ventilation requirements, and removed twin-tiered ships.

Research has identified a range of new animal welfare indicators, which are now being measured daily on ships and demonstrate how livestock are dealing with environmental conditions.

Consistent, comparable data being collected on voyages is key for future analysis, and to allow both exporters and the regulator to make informed decisions. It is also helping to move assessment of industry performance away from mortality rates alone.

While not a perfect measure, low mortality rates are widely considered to reflect good animal welfare outcomes. They are also absolute, objective, and have been steadily dropping over the past decade as the industry has improved. The results in 2020 and 2021 are unprecedented.

Many of the changes implemented in recent years have been in response to an incident on a live export ship in 2017, and subsequent television coverage, where it was clear the expectations of the community weren't met, and the industry needed to improve.

This document outlines those changes, and how they complement other improvements to animal welfare within the live export trade over the past decade.

Regulatory changes

Australia's livestock export industry is regulated by the Department of Agriculture, Water and the Environment. The Australian Standards for the Export of Livestock (ASEL) set out the requirements for pre-export preparation and the voyages themselves. The Australian Maritime Safety Authority regulates the ships.

In recent years, the Minister and regulators have overseen a series of government reviews and significantly strengthened the rules surrounding the trade.

- Shipments of sheep to the Middle East have been stopped during the hottest periods of the northern hemisphere summer, with an industry moratorium later reflected in regulation.
- Independent Government Observers have been introduced to monitor the effectiveness of exporters' shipboard arrangements. Report summaries are made public.
- Sheep have significantly more space on ships.
- A heat management plan is required to identify ways to mitigate potential risks.
- The minimum ship ventilation and air flow requirements have increased, and systems must be independently audited. Older ships have been phased out and others have been upgraded in response.
- Automatic environmental sensors are used to log daily temperatures and humidity on each deck.
- An investigation will be held into any voyage where the mortality rate is 1% or more (previously 2%).

Did you know?

Sheep now have up to 38% more space on live export ships than in 2017.

Industry initiatives

Animal welfare is at the forefront of the industry's thinking.

Its importance continues to grow, and so do efforts to communicate the improvements being made right along the live sheep export supply chain. This is due to a combination of factors, including the industry's maturity, greater knowledge from research and experience, and the clear message from the community that animal welfare is important.

From the types of sheep purchased for export to the way they are off-loaded overseas, management practices have been modified in response.

- Selection criteria at the farm level is a critical tool for experienced agents and buyers. Skilled stock handlers and veterinarians also inspect sheep on arrival to quarantine to exclude any animals not suitable for export.
- In the past, lambs were occasionally born on voyages. In recent years, even one lamb is a very rare occurrence, due to additional assessments and pregnancy testing.
- Sheep are loaded with the minimum amount of wool (regulation states it must be shorter than 25 mm in length), and 'leaving the socks on' sheep (not shearing below the knees) has helped to prevent nicks on their lower legs which may be at higher risk of getting infected.
- On-the-job training is regularly provided by exporters and their staff. For instance, veterinarians holding seminars at feedlots and on ships, or training videos being screened on ships to the crew members responsible for caring for the sheep.
- Automated environmental sensors are helping exporters understand where there may be 'hot spots', so they can manage those spaces by having fewer sheep in each pen or sheep better able to handle higher temperatures.
- Sheep are often off-loaded at night and during cooler parts of the day in the Middle East, so they are not being moved around during hotter hours of the day.



The 'one-percenters' matter – small things which change outcomes by one percent and combine to make a significant difference.

Communication and transparency

The industry has stepped up in recent years to open its doors, literally and figuratively, to provide the community with more insights into its practices.

- The Livestock Collective (TLC – formerly The Sheep Collective), was developed to provide clarity about the live sheep trade on behalf of people who work along the supply chain. One of its first activities was providing the opportunity for farmers, politicians and media to go on board while ships were in port loading sheep, to tour the livestock decks and ask questions about the conditions during a voyage. A virtual ship tour is also now available via <https://www.thelivestockcollective.com.au/vrshiptour>. TLC also has a strong social media presence, sharing stories of people working in the industry and answering Frequently Asked Questions.
- The Young Livestock Exporter Network (YLEN) was established to build networks and leadership opportunities for young industry professionals. Its 200+ members come from right across the supply chain, in Australia and in-market. They are building a very strong social media presence about their daily roles in the industry.
- Some exporters have also stepped up their communication with sheep producers and livestock agents, including information sessions about the on-farm management practices that can affect animal welfare on ships.

Photo credit: Holly Ludeman





Research and innovation

Livestock export industry research is funded by levies paid by farmers and livestock exporters. Around 70% of the budget is spent on animal welfare-related activities, and over many years the findings have contributed to changes in both management practices and regulation.

- While mortality rates are still the key measure of performance on ships, industry is responding to community concerns and providing more information about overall animal welfare.
 - A range of animal welfare indicators have been identified and tested over several years to determine which ones are both practical and meaningful.

The indicators cover the environment (eg temperature and sea swell); management (eg access to feed and water); and the sheep themselves (eg demeanour, injuries and illnesses)
- A data collection system has been rolled out to capture this animal welfare information in a systematic and standardised way. This provides greater opportunities for analysis and therefore data-driven decision-making by both exporters and the regulator.

- Efforts are underway to overcome the lack of connectivity on livestock ships, created because the steel structures interrupt wireless signals.
 - Being able to automatically transfer data from sensors around a ship to a central computer, in real time, will enable their wider application and allow alerts to be set up – for instance, if temperatures increase past a certain point – and action to be taken.
- The industry software tool available to calculate the risk of heat stress occurring on particular voyages (and reduce the number of sheep allowed on board if necessary) is being updated
- Trials of dehumidification equipment have been run on a ship in the Middle East, as high humidity has more impact on sheep than high temperatures. While not a practical and effective solution at the moment, there may be opportunities in the future as the technology evolves.
- A four year project is examining factors such as how sheep use space at different stocking densities (the number of sheep per pen), how diet influences ammonia production, and what happens to the pad under their feet at different temperatures.



Photo credit: The Livestock Collective

Did you know?

Livestock exporters record and report mortality data from every voyage. This transparency is helping the industry to keep improving. The average mortality rate on ships is now comparable to that experienced by sheep on farms in Australia.



Photo credit: The Livestock Collective

Did you know?

Every ship carrying sheep overseas has an Australian Government Accredited Veterinarian and a LiveCorp Accredited Stockperson on board, as well as crew members dedicated to caring for the sheep.

Welfare outcomes

The welfare of sheep being shipped from Australia has seen monumental, continuous improvements in the past few years, building on the steady progress of the previous decade or more.

While not a perfect measure, mortality is objective, absolute, and easily compared over time. There is also a correlation between the number of mortalities and overall welfare during a voyage.

As Figure 1 shows, average mortality rates have been dropping steeply over time. Between 2013 and 2017, the average annual mortality rate was 0.71%, while between 2019 and 2021 the average annual mortality rate was 0.24% – a reduction of approximately 67%.

While some individual voyages have had high mortalities in the past, there has not been a ‘reportable’ event since 2017, despite the limit being dropped from 2% of sheep on board to 1%.

The prohibition on sheep shipments to the Middle East during part of the year, introduced in 2018, has influenced the figures. However, the decline is evident across every month, as Figure 2 shows. This demonstrates that other changes to industry practices and regulation have also had a significant impact on animal welfare.

Al Kuwait exemption voyage

In late May 2020, COVID-19 was detected on the MV Al Kuwait as it came into Western Australia to be loaded with sheep bound for the Middle East, and the crew was quarantined. An application for an exemption to enable it to sail during the northern summer prohibition was approved, and it departed from Fremantle on 19 June with 33,341 sheep on board.

The voyage delivered the lowest mortality rate ever, for any live sheep shipment from Australia to the Middle East, at any time of year, in a 50+ year history: 28 sheep, or 0.08%.

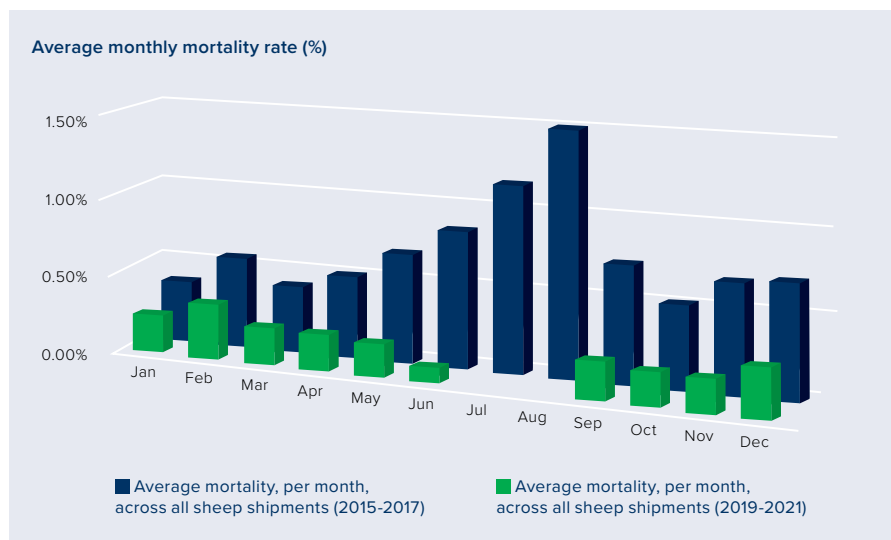
Detailed data was also collected on a range of animal welfare indicators, which showed the sheep exhibited similar behaviour on the ship as they had in the quarantine feedlot for the ten days prior to being loaded.

While there were some increased respiratory rates and panting, which is how sheep manage hot temperatures, this did not last long. Sheep on farms in Australia also pant to cool themselves on hotter days.

FIGURE 1: Average sheep deaths across all voyages for each year (2011-2021) and the number of voyages with ‘reportable mortalities’. *Source: Reports to Parliament*



FIGURE 2: Average sheep mortality rate by month, before and after significant changes to regulation in 2018. *Source: Reports to Parliament*



The reduced mortality rates and the exceptional result on the Al Kuwait – during the northern summer prohibition – highlight the significant improvements to animal welfare which have been achieved on livestock export ships by a combination of regulatory change and management practices over recent years.